The Complexity of Posttraumatic Growth:

Evidence from a South African Sample

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Declaration

I hereby declare that this research is the product of my original and unaided work, and that I have given acknowledgement to all sources used for research purposes, to the best of my knowledge. This thesis was submitted for the Degree of Master of Arts (Psychology) at the University of Witwatersrand, Johannesburg.

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Abstract

While the validity of posttraumatic growth has been repeatedly questioned, the prevalence of growth after exposure to trauma is widely established. Perceptions of posttraumatic growth were examined in a sample of South African adults (N = 135). Participants completed a self-administered battery of questionnaires via an online trauma survey or in paper format. Data specific to the nature of the traumatic event, particularly the type of trauma, time since the traumatic event, the impact of the event and perceived threat of the event, were collected along with posttraumatic growth (PTG) scores. Age, gender and perceived social support were also assessed as variables. Results of the multivariate analyses indicated that PTG differed significantly as a function of the type of traumatic event. PTG also differed according to the time since the traumatic event, although the relationship was complex and subject to the additional moderating factors of depression, anxiety and stress. Examination of the growth factors further revealed a differential pattern of PTG according to event type, and a variable pattern of relationship to social support, perceived threat and impact of the trauma. The findings supported the view of PTG as a complex, highly subjective perception of growth that may involve many levels and aspects of change. The nature of PTG is important in the context of South Africa, for the individuals, and their families, who have been exposed to high levels of crime, violence, chronic illness and road accidents, and for a nation in the process of rebuilding itself.

Keywords: Posttraumatic growth, perceived growth, resilience, traumatic event, Posttraumatic Growth Inventory

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"… the frightening and confusing aftermath of trauma, where fundamental assumptions are severely challenged, can be fertile ground for unexpected outcomes that can be observed in survivors: posttraumatic growth."

(Tedeschi & Calhoun, 2004, p.1)

1. Growth through Adversity

"…adversity, no less than prosperity, can change us for better as well as worse. A casual observer can easily appreciate the toll that such adversities can take on someone's physical and psychological well-being. But even a close observer may miss their perceived benefits, gains and advantages."

(Affleck & Tennen, 1996, p.900)

1.1 INTRODUCTION

The psychological value of positive personal growth as an outcome of traumatic experience is a subject full of controversy and possibility. Growth as an outcome of adversity is not a modern discovery but rather a widespread belief of early origin (Calhoun & Tedeschi, 2006). Throughout the history of humankind, there is written and oral evidence of personal growth as a result of the individual's struggle with hardship. That individuals are able to grow through adversity has been recorded in religious teachings, philosophical narratives and in social and cultural belief systems. Take for example, Friedrich Nietzsche's (1899) testament: "Out of life's school of war: What does not destroy me, makes me stronger", that can be translated into the popular motto that "without pain, there is no gain". It is this belief - that individuals' may develop wisdom and personal strength as a result of suffering through hardship and trauma - that is the bedrock of **posttraumatic growth**.

From an exclusive focus on the negative psychological effects of exposure to trauma such as natural disaster and combat, the mental health professions have acknowledged the possibility

of personal growth and positive outcomes after trauma. It is this paradigm shift and burgeoning field of interest with its associated concepts and models of posttraumatic growth that is relatively new. In the past two decades, researchers have focused on understanding and measuring the experience of positive psychological change that can arise in the aftermath of traumatic experiences. As a concept, posttraumatic growth (PTG) encompasses the positive psychological and emotional changes reported by individuals as a result of their struggle with traumatic or highly stressful life events (Tedeschi & Calhoun, 2004). The label "posttraumatic growth" was introduced by Tedeschi and Calhoun (1996) in their development of an inventory to quantify the aspects of perceived growth.

Several labels have been used, often interchangeably, to refer to these positive changes reported after trauma, and these include posttraumatic growth (Tedeschi & Calhoun, 1996, 2004), stress-related growth (Park, Cohen & Murch, 1996), benefit finding (Helgeson, Reynolds & Tomich, 2006), perceived benefit (McMillen, Smith & Fisher, 1997), and adversarial growth (Linley & Joseph, 2004). While the labels may differ, the root of the concept remains the same – that of the perceived benefits and psychological growth reported by individuals **as a result** of their traumatic experience (McMillen et al, 1997).

1.2 DEFINITION

Posttraumatic Growth (PTG) has been defined as "the subjective experience of positive psychological change as reported by an individual as a result of the struggle with trauma" (Zoellner & Maercker, 2006, p. 628). Within this conceptualisation, PTG has encompassed the cluster of self-reported personal changes perceived by individuals and attributed to their traumatic experience. Amidst significant traumatic stress reactions, individuals are

simultaneously able to recognise positive aspects of personal change or growth through the process of their coping with the trauma.

1.3 PRECONDITIONS FOR GROWTH

Given that PTG is defined as the positive psychological changes perceived by the individual as a result of their struggle with a traumatic event (Calhoun & Tedeschi, 2006), two integral elements of the concept are highlighted:

1.3.1 Firstly, posttraumatic growth encompasses the range of positive changes that individuals' report as a result of their ***subjective*** experience of trauma. PTG is thus a profoundly personal experience. Notably, the perception of PTG is marked by the individuals' recognition of a significant transformation of the self, beyond the level of functioning that was present before the traumatic event (Tedeschi & Calhoun, 2004). Individuals typically report growth in their emotional and psychological well-being that has surpassed their previous level of psychological functioning. This recognition occurs alongside their experience of significant emotional distress triggered by the event (Tedeschi & Calhoun, 2004). Reported growth may be most evident in the cognitive and emotional realms in the individual's life, but there may be behavioural changes as well (Powell, Rosner, Butollo, Tedeschi & Calhoun, 2003; Salter & Stallard, 2004).

PTG is the individual's subjective expression of the cumulative outcome of trauma – it may be a combination of their personality attributes, their tendency to find benefit in negative experiences, and the coping processes that they have employed as "they struggle with the

aftermath of trauma to derive meaning, feel wiser, and face uncertain futures with more confidence", among others (Tedeschi & Calhoun, 1996, p.99).

1.3.2 Secondly, PTG occurs in the aftermath of a traumatic event, as the individual attempts to cope with their experience and its consequences. Growth in this context is distinguished from the response to minor or every day stressors and normal developmental processes of growth (Linley & Joseph, 2004; Tedeschi & Calhoun, 2004; Zoellner & Maercker, 2006). Furthermore, the trauma itself does not trigger the process of growth; rather, it is the individual's struggle to manage the impact of the trauma on their lives and the emotional distress in the aftermath that is the catalyst for change (Tedeschi & Calhoun, 2004).

With regard to traumatic exposure, a significant level of threat and crisis is required in order to overturn the individuals' fundamental assumptions about themselves and their world. The foundation of the perception of PTG is the individual's rebuilding and revision of these cognitive structures, to incorporate the experience of trauma and the vulnerability that has accompanied it (Tedeschi & Calhoun, 2004). Both objective and subjective severity of the traumatic event have been related to greater PTG (Zoellner, Rabe, Karl & Maercker, 2008).

Growth includes a broad cluster of changes reported by individuals after their traumatic experience (Janoff-Bulman, 2004), rather than a single process or pathway. The personal transformation may include individual changes in well-being and personal strength, improved social networks and relationships with others, as well as changes in spiritual beliefs and the restructuring of life's goals and priorities (Calhoun & Tedeschi, 2006). This compound nature of the concept of PTG further complicates the empirical evaluation of the concept.

1.4 PTG AND SIMILAR CONCEPTS

Within the research on PTG, as noted by Smith and Cook (2004), the first challenge is defining the concept of PTG. Amidst several labels and similar definitions, PTG can be construed as either multidimensional or one-dimensional, as a process or as an outcome. PTG also shares many common elements with the concepts of thriving, resilience and hardiness. Smith and Cook (2004) identify this as the second challenge, distinguishing PTG from closely related constructs. It is open to debate whether PTG is the conceptually similar to resilience and hardiness, or whether these constructs are distinct and autonomous states of psychological being.

1.4.1 Definitions

1.4.1.1 POSTTRAUMATIC GROWTH

PTG is defined as the perceived psychological changes reported by individuals who have struggled with highly challenging life circumstances or trauma (Tedeschi & Calhoun, 2004).

1.4.1.2 RESILIENCE

Resilience is specifically defined as the "dynamic processes that lead to adaptive outcomes in the face of adversity" (Lepore & Revenson, 2006, p.29). Resilience, as a gauge of stress-coping ability, describes individual attributes and personal characteristics that enable individuals to grow and thrive when faced with adversity (Connor, 2006). The term resilience has been used extensively with regard to children from impoverished circumstances who have thrived and developed into well-adjusted adults, despite their early disadvantaged circumstances (Ickovics, Meade, Kershaw, Milan, Lewis & Ethier, 2006). The concept has

also been operationalised in adults as the capacity to maintain healthy, symptom-free functioning following traumatic events (Bonnano, Galea, Bucciarelli & Vlahov, 2006).

"Resilience is evident when individuals are able to resist and recover from stressful situations, or reconfigure their thoughts, beliefs and behaviours to adjust to ongoing and changing demands," (Lepore & Revenson, 2006, p.27). Based on this understanding, three core elements of resilience have been identified as resistance, recovery and reconfiguration. Central to the concept of resilience is the individual's ability to function adaptively despite significant emotional distress, with particular reference to the protective factors and personal qualities that enable individuals to grow through adversity (Laufer & Solomon, 2006; Richardson, 2002). Like PTG, resilience is regarded as a multifaceted concept, comprised of several elements including personality and coping processes (Connor, 2006).

1.4.1.3 HARDINESS

Hardiness refers to a personality attribute defined by three cognitive elements: commitment, control and challenge.

- Commitment refers to the individual's belief in themselves, in a sense of meaningfulness and active curiosity about the world.
- Control encompasses the individual's perceptions that they can exert an influence over the course of events in their life.
- Challenge refers to the individual's expectation that change occurs, that it is necessary for development to occur and can be used as an opportunity for growth.

(Tedeschi & Calhoun, 2004; Zoellner & Maercker, 2006)

This concept was introduced by Kobasa (1979) from her work with highly stressed male executives (cited in Zoellner & Maercker, 2006). The integration of these three components into a single, unified component has been theoretically and empirically challenged (Linley, 2003).

1.4.1.4 THRIVING

Thriving can be defined as the effective use of individual and social resources in response to threat, that leads to positive psychological, physical and social outcomes (Ickovics & Park, 1998). PTG is commonly held to be an expression of thriving.

1.4.1.5 SENSE OF COHERENCE

Another three-dimensional construct, Sense of Coherence was introduced by Antonovsky (1987). It encapsulates an individuals' sense that the world is comprehensible, manageable and meaningful, that allows them to effectively manage and deal with stress (Antonovsky, 1987). There has been substantial support on theoretical and empirical grounds for the unitary construct of Sense of Coherence (Linley, 2003). PTG may be moderately related to one dimension of Sense of Coherence - that of the world as a meaningful place (Znoj, 1999 cited in Zoellner & Maercker, 2006).

1.4.2 A Comparison of Concepts

Each of these constructs emphasises a distinct aspect of the adjustment process and the recognition of positive changes after trauma. Tedeschi and Calhoun (2004) have argued that the qualitative change in functioning evident in PTG is unlike that of the other constructs. PTG is distinguished by its transformative component as individuals move beyond their

previous level of functioning, beyond the ability to resist and recover from highly stressful conditions (Tedeschi & Calhoun, 2004). While some authors view PTG as one possible outcome for individuals who have experienced the reconfiguration element of resilience (Lepore & Revenson, 2006), others have argued that resilience is the ability to live a purposeful, functional life after the experience of adversity, lacking the transcendent quality of change ascribed to PTG (Tedeschi & Calhoun, 2004).

However, Lepore and Revenson (2006) noted that in both PTG and reconfiguration resilience, the personal growth experienced by the individual moved beyond the individuals' typical level of functioning and was distinguished by a transformative quality. In contrast, PTG encompassed only the positive psychological changes as a result of trauma, whereas the reconfiguration resilience included both positive and negative changes (Lepore & Revenson, 2006). The concept of thriving also suggested a move beyond the pre-trauma level of functioning to incorporate growth and greater well-being (Ickovics & Park, 1998). Thriving and PTG appear to share many similarities, such that PTG has been regarded as a form of thriving, distinguished by its definition and resulting from a specific stressor (Cohen et al, 1998).

Linley (2003) too proposed that positive adaptation after trauma is more than a return to pre-trauma functioning and resilience to the negative effects of the traumatic event. PTG is represented by "growth", a shift to a higher level of functioning and a positive gain that is tangible following the trauma (Linley, 2003). It is this movement beyond resilience, to encompass thriving and a level of functioning that surpassed the premorbid state of being that is characteristic of the concept of PTG (Cadell, 2007).

Tedeschi and Calhoun (2004) critically emphasise the role of the individual's struggle with trauma, the impact on the individual's assumptive world and importance of cognitive processing, and even suggest that those individual's who possess significant coping abilities, may not perceive high levels of PTG after trauma. This fits with the possible curvilinear relationship between well-being and PTG suggested by Lechner et al. (2006). A significant point of difference with regard to PTG and similar constructs is that PTG refers specifically to perceptions of psychological growth after the experience of a traumatic event, an event that has threatened and invalidated the individual's assumptive world (Calhoun & Tedeschi, 2006). In this sense, PTG is more event-specific. It is the outcome of the individual's attempts to cope with the impact of the specific trauma, be it a chronic or an acute stressor. The characteristics encompassed by Resilience, Hardiness and Sense of Coherence can linked to the positive changes perceived after the experience of a traumatic event but equally, can be evident after experiences of long-term adversity and stressful life circumstances such as poverty. Individuals can be described as resilient or hardy; those that are able to assimilate the experience of loss and adversity into their lives. In contrast, individuals are able to perceive psychological growth as the result of highly stressful events (Calhoun & Tedeschi, 1998). Moreover, PTG could be, in part, a positive illusion or bias in the aftermath of trauma that serves a protective, buffering function, and ultimately be translated into actual psychological change. This process in itself is unique in comparison to the other concepts of psychological adaptation after trauma

Resilience, Hardiness and Sense of Coherence refer to the individual's personal characteristics that enable them to cope with adversity and function effectively in the face of stress (Tedeschi & Calhoun, 2004). These resources are believed to buffer stress and enable the individuals to manifest positive changes in their life. These resources are stable

characteristics that enable the individual to accommodate changes in the longer term and play an important role in post-trauma adjustment (Waysmann, Schwarzwald & Solomon, 2001). It is assumed that these intrapersonal resources would be implicated in the process of PTG and may in turn foster PTG. Thus, PTG is most likely to overlap to a degree with each of these constructs.

More research on the similarities and difference of PTG, Resilience, Hardiness, Thriving and Sense of Coherence is needed to distinguish these concepts. It has been suggested that the differences may be no more that a variability in terms of the subjects, of the definition of change and of the specific nature of the trauma (Cohen, Cimbolic, Armeli & Hettler, 1998).

1.5 THE PREVALENCE OF PTG

Posttraumatic growth has been reported by individuals who have experienced various, different types of traumatic events. Estimates have suggested that 30% to 90% of individuals perceive significant positive changes, or aspects of growth, in their lives as a result of their experience (Janoff-Bulman, 2006). For example, Sears, Stanton and Danoff-Burg (2003) found that 83% of breast cancer patients reported finding benefit in their battle with the illness, compared to 50% of breast cancer patients who reported benefits in a study by Taylor (1983). Personal growth has been documented in survivors more than 50 years after the bombing of Dresden (Maercker & Herrle, 2003). Further evidence has shown that individuals exposed to severe, multiple traumatic experiences over a period of years have also perceived growth (Powell et al., 2003).

The perception of growth after trauma, however, is not a universal experience. It is believed that many individuals ***do not*** perceive positive psychological growth in the aftermath of their traumatic experience (Calhoun & Tedeschi, 2006). There is little evidence regarding individuals who do not endorse growth. It is unknown why certain trauma survivors do not perceive PTG, what percentage of individuals do not perceive growth, whether these individuals experience only negative consequences of trauma, or whether certain individuals do not perceive growth as they consider themselves competent in these areas of psychological functioning prior to the trauma (Calhoun & Tedeschi, 2006). Moreover, even for those individuals who do report PTG, the process of growth, and the correlates and predictors of PTG are not clearly defined or understood.

1.6 PTG AND TRAUMATIC EVENTS

1.6.1 The Nature of Trauma

The experience of a traumatic or highly stressful life event is a necessary precondition for the perception of PTG. Traumatic events by definition involve the threat of death or serious injury, including actual or threatened death or injury to the self, or witnessing the event or learning about the unexpected violent death, serious injury or threatened injury to a family member or close friend (APA, 2000). Emotional responses to these events typically include intense fear, helplessness and/or horror (APA, 2000). Traumatic events can include combat, violent personal assault (sexual assault, robbery or mugging), terrorist attack, torture, kidnapping, natural or man-made disasters, severe automobile accidents, or diagnosis of a life-threatening illness (APA, 2000, p.463).

The concepts of trauma and traumatic event widely used in the PTG literature are broader and more inclusive than those specified by the DSM-IV definition. Thus trauma with regard to PTG can include severe illness and terminal disease as well as violence, accidents and disasters, and even divorce (Zoellner & Maercker, 2006). Tedeschi and Calhoun (2004) have argued for the less restrictive use of these concepts, to allow for the inclusion of events that represent significant challenges to the individuals' adaptive and coping resources (social, emotional and cognitive resources), and to the foundations of the individual's belief system and worldview. They have used the terms *trauma, crisis* and *highly stressful events* interchangeably as the precipitating events for PTG (Tedeschi & Calhoun, 2004). Trauma as the catalyst for growth in this context is regarded as "confronting the terror of (*a)* fragile existence, a task for which *(individuals)* are dramatically unprepared psychologically" (Janoff-Bulman, 2006, p85).

To date, empirical studies have focused on personal growth following a range of traumatic events. These have included breast cancer (Lechner, Antoni, Carver, Weaver, & Phillips, 2006; Weiss, 2004), violent trauma (Connor, Davidson, & Lee, 2003), sexual assault (Frazier, Conlon & Glaser, 2001; Frazier, Tashiro, Berman, Steger & Long, 2004), combat (Maercker & Herrle, 2003; Powell et al., 2003), terrorism (Linley, Joseph, Cooper, Harris & Meyer, 2003; Swickert, Hittner, DeRoma & Saylor, 2006), bereavement (Polatinsky & Esprey, 2000), natural and technological disasters (McMillen et al., 1997), HIV/AIDS infection and disease progression (Milam, 2006), Severe Acute Respiratory Syndrome (Cheng, Wong & Tsang, 2006), heart attack (Affleck & Tennen, 1996), life-threatening illness (Widows, Jacobsen, Booth-Jones & Fields, 2005), and road accidents (Rabe, Maercker, Zoellner, & Karl, 2006; Salter & Stallard, 2004), among others.

Within this study, the terms 'trauma', 'crisis', 'traumatic event' and in a few cases, 'adversity', have been used to describe the precipitating event that has been reported by the individual as the precursor to personal growth.

1.6.2 Traumatic Stress Reactions

Severe, even incapacitating traumatic stress reactions may affect individuals in the wake of trauma. Negative responses can include fear, anxiety, sadness, depression, guilt, anger, irritability, high levels of stress, unpleasant physical reactions and psychological numbing (Tedeschi & Calhoun, 2004). Many individuals may display traumatic stress reactions in the immediate aftermath of a traumatic event, but not all individuals develop full blown Post-traumatic Stress Disorder (PTSD). The prevalence rates of PTSD after traumatic events has ranged from 9% to 23% of the population in the United States of America, with the highest rates of PTSD associated with physical assault and rape (Resnick, Kilpatrick, Dansky, Saunders & Best, 1993). An Australian study found a lower incidence of PTSD across a 12-month period in comparison to an American epidemiological study (Creamer, Burgess & McFarlane, 2001). The probability of developing PTSD is dependent on the nature of the traumatic event, as well as certain risk factors, among other characteristics (Creamer et al, 2001). It is estimated that more than two-thirds of a general population will experience a significant traumatic event at some point in their lives (Galea, Nandi & Vlahov, 2005), and it is generally believed that 10% to 20% of individuals will experience PTSD after a traumatic event (American Friends of Tel Aviv University, 2008).

The presence of PTG does not appear to negate nor counteract these negative effects of trauma. Rather, the emotional pain and distress associated with the traumatic event may co-exist with the perceived growth attributed to the traumatic event (Calhoun & Tedeschi, 2006).

"Posttraumatic growth occurs concomitantly with the (*individuals*) attempts to adapt to highly negative sets of circumstances that can engender high levels of psychological distress", (Tedeschi & Calhoun, 2004, p.2). Posttraumatic growth and posttraumatic stress can therefore be construed as two independent psychological states, rather than bipolar reactions to traumatic events (Linley & Joseph, 2004).

A singular focus on the perception of benefits without the recognition of the negative consequences has been criticised as presenting an unrealistic view of PTG (Cheng et al., 2006; Park & Helgeson, 2006). Theorists have argued that the acknowledgment of both the positive and negative consequences of trauma is necessary for an accurate understanding of the individual's response to trauma (Linley & Joseph, 2004). Yet, in practice, the majority of PTG studies have focussed only on growth perceived by individuals as a result of their struggle with stressful life events (Calhoun & Tedeschi, 2006; Linley & Joseph, 2004). The systematic investigation of PTG is widespread but plagued by divergent empirical findings and contrasting theoretical viewpoints of posttraumatic growth. Underlying this debate is the very nature of PTG itself: that is, PTG as a **subjective** experience of growth and transformation in the aftermath of a **traumatic event**.

Within this study, PTG is conceptualised as a multidimensional concept subject to the influence of a variety of psychosocial variables, and representative of multiple pathways of change. While individuals may frequently endorse growth as a result of their struggle with traumatic events, this concept of growth can embody different meanings and experiences for different individuals.

1.6.3 Growth and Distress

Studies of PTG in a variety of samples have indicated that a significant proportion of individuals are able to endure the severe psychological effects of trauma and return to a quality of life and psychological functioning that is equivalent to, or better than, before the trauma (Taylor, 1983). Growth is not a direct or automatic result of the traumatic experience. Rather, it is through the struggle of coping with trauma that the individual is able to perceive that growth has occurred (Tedeschi & Calhoun, 1998). Distress is thus a necessary condition for posttraumatic growth to emerge. Growth in the aftermath of trauma and the emotional distress triggered by the trauma are fundamentally linked, and it is widely accepted that both co-exist within the individual in the context of coping with the trauma (Calhoun & Tedeschi, 2006; Janoff-Bulman, 2006).

1.7 PTG AND THE ASSUMPTIVE WORLD

Fundamental to the concept of posttraumatic growth is the devastating effect that the traumatic experience has on the individuals' core beliefs about the self, the world and their future (Swickert et al., 2006). Whilst simultaneously coping with emotional distress, fear, pain and/or loss brought about by the traumatic event, the individual is also faced with recreating their most basic understanding of the world. This framework of beliefs, goals and values relating to the self, the world and the future is known as the 'assumptive world' (Janoff-Bulman, 2004). These assumptions influence understanding and behaviour, and provide a general sense of meaning, security and purpose for the individual (Tedeschi & Calhoun, 2004). The role of the assumptive world in positive adjustment after trauma, and the interplay with other factors, is succinctly described by Janoff-Bulman (1992):

> "Traumatic life events shatter our fundamental assumptions about ourselves and our world. In the aftermath of these extreme experiences, coping involves the arduous task of reconstructing an assumptive world, a task that requires a delicate balance between confronting and avoiding trauma-related thoughts, feelings and images. Over time, with the help of personally meaningful cognitive reappraisals and genuine support from close, caring others, most trauma victims manage to rebuild their inner world." (p.169)

Trauma in this context is viewed as an extreme shock to the inner world, resulting in the internal disintegration of the individuals' basic beliefs and schematic structures. Human nature is characterised by adaptation to change in order for survival. Creating meaning out of individual experiences and comprehending the world are believed to be essential human traits (Janoff-Bulman, 2006). These very characteristics provide the foundation for the perception of PTG.

1.8 AIMS OF THIS STUDY

The incidence of posttraumatic growth is well-established and PTG has been reported by samples across socio-cultural contexts (Calhoun & Tedeschi, 2006). Despite the evidence for PTG in samples that have faced a range of traumatic events, PTG is still a controversial concept. The validity of PTG as a construct has not been widely established or accepted. The covariates and predictors of PTG also require further investigation, as evidence is typically mixed across different studies.

The present study was formulated as a contemporary exploration of PTG and the factors that correlate with personal growth after the experience of trauma. Only a few studies of posttraumatic growth in South African samples have been reported in scholarly journals (Peltzer, 2000 cited in Tedeschi & Calhoun, 2004; Polatinsky & Esprey, 2000). South African individuals and communities experience elevated levels of crime, violence, road accidents, and chronic illness, such as AIDS and cancer, and are faced with the psychological and emotional consequences of these traumas on daily basis. Accordingly, this study focussed on the most prevalent traumatic events within the South African context – chronic illness, traumatic bereavement, severe road accidents and crime. The rationale of the study was thus a broad examination of PTG and the factors critical to the process of personal growth after trauma.

The aim of the study was to examine reports of PTG in a sample of individuals who had experienced a variety of traumatic events within the South African context. Several variables were assessed as correlates and predictors of PTG; these included the type of traumatic event, time since the trauma, the subjective distress triggered by the event, the level of threat posed by the event, age, and gender as well as perceived social support. The primary focus of analysis was the nature and pattern of the relationships between perceptions of PTG and the type of traumatic event and time since the event.

2. The Concept of Posttraumatic Growth

"The phenomenon of self-perceived PTG is still not well understood and cannot yet be described in a theoretically satisfying manner or measured with reliability and validity."

(Zoellner & Maercker, 2006, p.649)

2.1 PTG AS AN OUTCOME

By and large, PTG is conceptualised and measured as a distinct outcome of coping, or struggling to cope, with a traumatic event (Park & Helgeson, 2006). Therefore, the manifest cognitive and emotional changes perceived by the individual as growth, are conceived of as an **outcome** or product of the coping process (Zoellner & Maercker, 2006). PTG as an outcome is regarded as a distinct, independent state of personal growth (Tedeschi & Calhoun, 2004). In contrast, PTG as a process is viewed as the collective coping strategies employed by the individual in order to deal with the emotional distress caused by the impact of the traumatic experience (Zoellner & Maercker, 2006).

2.1.1 Objective

As stated, the aim of this study was to assess PTG as an outcome of coping with a traumatic event, these events being self-identified by individuals in a South African sample, alongside an evaluation of specific characteristics of the individuals' current levels of emotional distress and social support. There is a gap in the literature on PTG reported by South African samples as there are only a handful of published reports of the nature of PTG in South Africa.

2.2 MODELS OF PTG

Several theories have been formulated to account for the process of posttraumatic growth. Theories relevant to the understanding of PTG as conceptualised in this study, will be reviewed, as follows:

1. The Revised Model of PTG (Tedeschi and Calhoun, 2004)
2. Cognitive Adaptation Theory (Taylor, 1983)
3. The Janus Face model of PTG (Zoellner and Maercker, 2006)

2.2.1 Tedeschi and Calhoun (2004) - Revised Model of PTG

In their revised model of PTG, Tedeschi and Calhoun (2004) liken the impact of a traumatic event to the seismic effects of an earthquake. The psychological impact of the traumatic event effectively shatters the individual's core set of assumptions – the beliefs, ideas and goals known collectively as the individual's assumptive world (Janoff-Bulman, 1992). Alongside an internal dissolution or breakdown of these cognitive schematic structures, the individual also experiences the physical and emotional aspects of loss, injury, pain and grief that have accompanied the traumatic event. Growth is viewed as the outcome of coping and survival, as a by-product of the individuals' emotive and cognitive struggle with the trauma as opposed to an intellectual pursuit of meaning (Tedeschi & Calhoun, 2004).

The experience of psychological distress is deemed necessary to promote and stimulate cognitive restructuring vital to the individual's perception of growth. Moreover, the individual's perception of PTG does not diminish or decrease their experience of pain and suffering – rather, the authors have argued that the growth and distress co-exist and are

inextricably linked. The emotional distress is believed to compel the individual to re-evaluate and reformulate his or her world view, in order to accommodate the negative experience. This restructuring of the assumptive world has provided the impetus for the experience of growth. PTG, therefore, is assumed to develop after the primary resolution of the trauma (Tedeschi & Calhoun, 2004).

PTG has been distinguished from other developmental and maturational processes by the individual's emotional involvement with the traumatic event, even though individuals who have not reported the experience of a traumatic event have also reported positive life changes and growth when assessed (Tedeschi & Calhoun, 2004). However, it is argued that the positive changes reported by individuals who have experienced traumatic events have result in higher growth scores and are distinguished by the emotional quality and life-altering nature of the change.

This is the most comprehensive model of PTG, developed in accordance with the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996). The model has provided a comprehensive account of the range of responses that constitute PTG. Three clusters of change are referred to as the Domains of growth and remain central to the understanding the concept of PTG:

1. Changes in perceptions of the self,
2. Changes in interpersonal relationships, and
3. Changes in life priorities.

   (Tedeschi & Calhoun, 2004)

2.2.1.1 FACTORS OF PTG

Derived from the three broad areas of change identified by Tedeschi and Calhoun (2004), the concept of PTG includes five dimensions, or factors, of growth:

- **Relationships with Others**: After the experience of a traumatic event, individuals have reported closer, more intimate relationships with others as well as more emotionally expressive interactions with friends and family.
- **Personal Strength**: Individuals have recognised and acknowledged their own personal strength in the coping process, alongside an increased awareness of their own vulnerability.
- **New Possibilities**: Individuals have recognised new possibilities as a result of the trauma, and new directions in work, personal gaols and/or hobbies that have enhanced their life experience.
- **Spiritual Growth**: Individuals have reported an increased awareness and contemplation of fundamental existential questions, as well as a deepening of their religious or spiritual beliefs as a result of the trauma.
- **Appreciation of Life**: Individuals have testified to an increased appreciation for life in general, for the details of daily life, as well as a changed sense of priorities in their lives.

(Tedeschi & Calhoun, 2004)

Alongside this core of growth responses commonly reported by individuals, changes specific to the individual's struggle with a particular traumatic event can also be accounted for as PTG (Calhoun & Tedeschi, 2006). Of prime importance is the value attributed to the traumatic event by the individual in the aftermath of the trauma. While individuals would not choose to experience the trauma, the valuable aspects of the coping process, and the qualities of growth,

are recognised alongside the distress caused by the trauma (Tedeschi & Calhoun, 2004). The perception of PTG is founded on a key paradox: that of the individual's recognition of their own personal strength in the face of an increased awareness of their personal vulnerability (Tedeschi & Calhoun, 2004). PTG is the positive outcome of an experiential and emotional process; the culmination of the individual's coping with the distress and their cognitive processing of the impact of the event, as opposed to an intellectual pursuit of awareness or improved psychological functioning.

Within the Tedeschi and Calhoun process-oriented model, several variables are assumed to influence the process of PTG. These include the personal characteristics, personality attributes and coping styles of the individual, the social context within which the experience of trauma and recovery occurs, the individual's cognitive processing of the impact of the event, and the individual's accommodation of the trauma into their world view (also referred to as the life narrative). A diagrammatic representation of the comprehensive model is presented in Figure 1.

2.2.1.2 INDIVIDUAL CHARACTERISTICS

Within this model, it is **not the specific nature of the trauma** itself but the individual's struggle in the aftermath of the experience that is important for growth (Tedeschi & Calhoun, 2004). However, the event must be sufficiently traumatic to shatter the individual's assumptive world and challenge these core beliefs in order for growth to take place.

Individual characteristics and coping styles have been identified as an integral part of the survivors' response to the trauma (Tedeschi & Calhoun, 2004). A key factor emphasised within the model is the individual's ability to manage their distressing emotions in the wake

of trauma. The personality factors of optimism, extraversion and openness to experience are considered to aid the development of PTG, based on evidence for a modest relationship of these characteristics to PTG (Helgeson et al, 2006; Tedeschi & Calhoun, 2004). Positive personal resources, such as heightened awareness of emotions and openness to challenges, appear to facilitate the perception of PTG according to research (Stanton, Bower & Low, 2006).

2.2.1.3 COGNITIVE PROCESSING

Cognitive processing has been assigned a key role in the Tedeschi and Calhoun model. Traumatic event is presumed to have shattered the individual's assumptive world, and thereafter the individual has embarked on a process of rebuilding their schematic framework to include the traumatic experience and to reflect their new goals, beliefs and meanings (Janoff-Bulman, 2004; Tedeschi & Calhoun, 2004). The emotional impact of the traumatic event is identified as a potent stimulus for the cognitive processing and schematic revision central to PTG. The "often lengthy process during which distress persists may actually be important for the maximum degree of posttraumatic growth to occur" (Tedeschi & Calhoun, 2004, p.8).

The process of PTG is thought to develop over time. It is assumed that individuals rely on more automatic coping processes in the early period after the trauma, amidst the initial emotional upheaval and pain, but with time, resort to more constructive and deliberate processing of the traumatic event on a cognitive level (Tedeschi & Calhoun, 2004). The individual's coping abilities and perseverance in dealing with the traumatic event aid the process of cognitive restructuring of their core schemas, and are in turn influenced by their coping styles and the significance of the events they have experienced (Tedeschi & Calhoun,

2004). Changes in the quality of cognitive processing are evident over time; from initial attempts to comprehend and manage the trauma, the individual is assumed to develop greater understanding of the significance of the event (Tedeschi & Calhoun, 2004; Nolen-Hoeksema & Davis, 2004).

Cognitive processing is thus the foundation for the rebuilding of the assumptive world, a hallmark of the individual's emotional engagement with the traumatic experience and the coping process, and the subsequent development of PTG. Deliberate event-related rumination is a key element of this cognitive processing (Cobb, Tedeschi, Calhoun & Cann, 2006; Zoellner & Maercker, 2004). Rumination in this context is defined as thinking that is conscious, related to a specific event, recurrent and easily accessible (Tedeschi & Calhoun, 2004). It has been distinguished from the more negative, self-punitive persistent thinking that is related to depression and negative affect (Tedeschi & Calhoun, 2004). In the initial phase after the trauma, the intrusive thoughts and images that characterise rumination are more automatic and highly distressing to the individual. With time, this is thought to evolve into more active thinking related to the individual's restructuring of their schematic framework. The evolution is a result of the individual's efforts to manage and comprehend the trauma and its impact (Tedeschi & Calhoun, 2004).

Deliberate cognitive processing of the traumatic experience is considered to be crucial to the development of PTG. At the core of growth are changes in cognitive functioning. Changes in the emotional, social and behavioural aspects of the individual's functioning may be facilitated by the new schematic structure of beliefs and goals that are the result of the cognitive processing (Wagner, Forstmeier & Maercker, 2007). However, the relation between

PTG and behavioural changes are complex and subject to the influence of multiple factors, as is the relationship of PTG to psychological well-being.

2.2.1.4 SOCIAL SUPPORT

According to Tedeschi and Calhoun (2004), cognitive processing of the impact of the traumatic event is aided by self disclosure in a supportive social context, especially when the social support is strong and consistent. Weiss's (2002) study of PTG in breast cancer survivors further confirmed the value of social support in the development of PTG. Social variables may have a fundamental impact on the individuals' cognitive processing of traumatic events, and lack of social support is a strong predictor for the development of PTSD (Guay, Billette & Marchand, 2006).

Supportive others can provide a safe space for the individual to express their feelings and to re-create their personal stories to include the experience and its impact. Supportive others may also provide new perspectives on the experience that individuals can integrate into their new schemas, as well as the modelling of active coping behaviour and alternative viewpoints of the experience (Tedeschi & Calhoun, 2004). Individuals involved in both support and disclosure may also develop increased closeness and stronger bonds, and these enhanced personal relationships represent an important domain of personal growth. However, it is also possible that certain social systems may hinder the individual's coping process, especially where there is a lack of support and a suppression of disclosure.

2.2.1.5 LIFE NARRATIVE AND WISDOM

According to the revised model of PTG, the individual's struggle with the traumatic experience is ultimately resolved in a revised life narrative, a general framework of beliefs about the self and life. Post-trauma, the narrative may have been transformed to reflect the impact of the trauma and personal growth (Tedeschi & Calhoun, 2004). This revised personal life story is also considered to reflect, and mutually influence, general wisdom. Elements of this wisdom are believed to exist in PTG. In particular, the recognition and management of uncertainty, the integration of emotional and cognitive elements in the coping process, and the recognition and acceptance of vulnerability and limitation, are elements of both PTG and wisdom (Linley, 2003).

Posttraumatic growth encompasses the processes whereby the survivor of a traumatic event is motivated to perceive his or her life differently, in terms of the self, of connections with others and of the meaning of life. It is not clear whether this in turn generates actual or real-life changes.

Within the model, time is assumed to play a critical role. Tedeschi and Calhoun (2004) view PTG as both a process, involving the individual's active cognitive processing of the trauma and coping with the event, and as an outcome. The process of coping and restructuring is assumed to decrease with time, leading to the outcome-based, more stable expression of PTG. Further, the model is inclusive of "a variety of factors in different domains (*that*) interact with, influence, and are influenced by posttraumatic growth" (Tedeschi & Calhoun, 2004, p.12). With regard to the temporal course of PTG, it is assumed that this "general pattern of mutual influences unfolds over time" (Tedeschi & Calhoun, 2004, p.12). Different aspects of PTG may exhibit different timing and there may be significant variability in perceptions of

PTG from individual to individual (Tedeschi & Calhoun, 2004). The time frames in which growth occurs may also vary, and the trajectories of growth may be quite different, even when the traumatic experiences are similar (Calhoun & Tedeschi, 2006).

2.2.1.6 COMMENTS ON THE MODEL

The revised model of PTG proposed by Tedeschi and Calhoun (2004), sought to provide a comprehensive explanation of the process of PTG. The authors proposed the model as a generalised representation, able to account for variations in the domains of growth according to individual, trauma-related and contextual factors (Calhoun & Tedeschi, 2006). It is inclusive of the processes of rumination and cognitive processing, seen as the necessary steps to rebuilding of the individuals' assumptive world to integrate the impact of the trauma. The model emphasises the importance of the individual's emotional engagement with the trauma, especially the impact of the event and emotional distress that follows it. Included in the mix is the potential influence of a variety of external factors, including proximate and distal socio-cultural factors, individual characteristics such as personality attributes and coping skills, and characteristics of the trauma itself. In this comprehensive, largely explanatory model, the specific characteristics of traumatic events and how these may influence the perception of growth are not denied nor explored. The model is based on the assumption that PTG develops over time, with suggestions as to the temporal course of growth but without a detailed examination of how the timing of assessment may influence reports of PTG.

A primary criticism of this model is the lack of precise definitions of PTG and the contributing variables (Zoellner & Maercker, 2006). The proposed process of PTG is inclusive, with great emphasis on the mechanisms of cognitive processing. It is a fully comprehensive account of the factors that contribute to the individual's perception of growth;

a theoretical replica of the complex nature of PTG. Zoellner and Maercker (2004) have accurately described Tedeschi and Calhoun's revised model as a functional and descriptive framework, difficult to test empirically but complex and inclusive. Janoff-Bulman (2004) has pointed to a lack of clarity in the use of the term PTG and in the formulation of the concept of PTG. Tedeschi and Calhoun (2004) have acknowledged that the phenomenon of PTG is a complex, multifaceted, ongoing and interactive process. Their model of PTG has sought to accommodate the variety of factors that interact with and exert influence upon each other over time in the development of PTG (Tedeschi & Calhoun, 2004). The authors have accounted for the variability that exists in perceptions of PTG, across individuals, social groups and time frames.

Tedeschi and Calhoun's emphasis, or over reliance, on the role of cognitive processing in PTG has been criticised (McMillen, 2004). Wortman (2004) has argued that evidence has indicated that cognitive processing is not involved in the perception of PTG. Calhoun and Tedeschi (2006) have remained firm in their belief that the amount of growth is significantly related to the amount of cognitive activity. McMillen (2004) criticised the model for understating the role of social support and cultural forces in the larger environment. Wortman (2004), however, questioned the role of social support and disclosure, as social networks may fail to provide positive support and empathy for trauma survivors. Interactions within social networks may actually impede growth. Examples of the negative impact of social systems include individuals who give advice that may be regarded as unhelpful and intrusive for the trauma survivor, or who overtly expect a positive recovery that places extra pressure on the survivor to cope effectively (Wortman, 2004). Individuals in social groups may discourage disclosure or display active discomfort when faced with the traumatised individuals' high levels of anxiety and emotional distress in telling their story. Wortman challenged theorists to

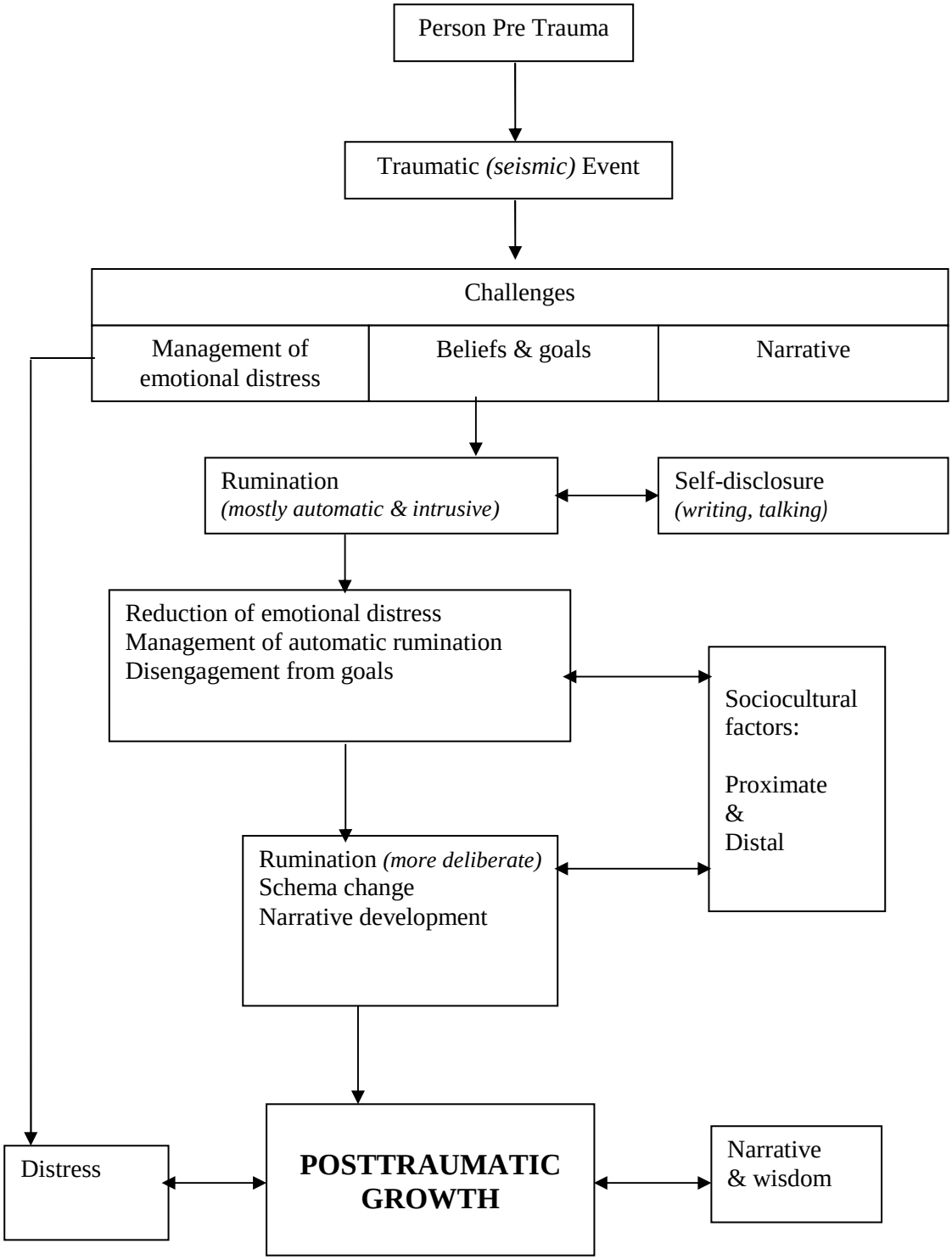
include factors that impede growth in the study of PTG, especially as positive changes endorsed by individuals occur in the realm of emotional distress and the negative after effects of trauma. Certain types of traumatic events, such as those that involve violence or trauma caused by someone who intended harm, may also contain factors that hinder PTG (Wortman, 2004).

Despite these criticisms, the Tedeschi and Calhoun model provides the most detailed explanation of the process of growth, inclusive of the individuals' personal attributes, coping styles and the external influences that may contribute to the perception of PTG.

Tedeschi and Calhoun (2004) have conceptualised PTG as an adaptive and authentic outcome of the individual's struggle to accommodate the impact of the traumatic experience. Growth is a transformative process, implied in the movement beyond the individual's pre-trauma level of functioning and may occur in several areas of the individual's life. Variability within the process is expected, although the elements of the process are regarded as similar for each individual, in terms of the disruption to the assumptive world, cognitive and emotional engagement with the trauma and the role of supportive networks. However, there is also the possibility that in the multiple facets and layers of post-trauma functioning, there may be multiple pathways to growth and many outcomes that can be defined as PTG. Essentially Tedeschi and Calhoun have presented a complex picture of a complex human phenomenon - PTG.

FIGURE 1

A Comprehensive Model of PTG (Calhoun & Tedeschi, 2006, p.8)



2.2.2 Taylor (1983) – Cognitive Adaptation Theory

According to Taylor's Cognitive Adaptation Theory, psychological adaptation, or posttraumatic growth, is a positive illusion that enables the individual to adjust psychologically to the traumatic event (Taylor, 1983). Cognitive adaptation to traumatic events is thus dependent on the individual's positive appraisal of the experience (Zoellner & Maercker, 2006). Taylor views PTG as an illusion that enables the individual to assimilate the impact of the event and deal with the psychological distress of the trauma (Sumalla, Ochoa, & Blanco, 2009).

2.2.2.1 Areas of Adaptation

Taylor (1983) theorised that individual's undergo a process of readjustment in three broad areas after the experience of a traumatic event. These areas of adaptation have been identified as:

1. The need to understand the significance and meaning of the experience in context;
2. The need to regain control and mastery over the self and their world after the experience;
3. The need to re-establish self esteem that has been negatively affected by the trauma.

(Taylor, 1983).

This model highlights the individual's search for meaning through positive appraisal that occurs on several levels. In the process, the individual attempts to understand why the trauma has happened, evaluates the importance of their experience, and undergoes a reappraisal of themselves, their attitudes, their priorities, and their way of life (Taylor, 1983). The trauma is assumed to have had a negative impact on the individual's sense of control over themselves and their world, and this prompts them to regain their sense of mastery and personal control.

This is achieved through adaptation to the new beliefs introduced by the traumatic experience. According to Taylor (1983), these efforts to re-establish control may be behavioural or psychological in nature, such as adopting a positive attitude. In addition, the individual strives to regain their sense of self esteem in the recovery process (Taylor, 1983). This is believed to involve downward social comparisons, especially with those experiencing greater relative suffering, in order to promote the individual's process of self-enhancement.

The three themes of meaning, mastery and self-enhancement are believed to exist in every individual's process of adaptation to trauma, although the form may vary from individual to individual. According to Taylor, in order to resolve these three elements of the readjustment process, it is necessary for the individual to create and maintain a set of positive illusions about themselves and their world. Meaning, mastery and self-enhancement as cognitive processes are thus founded on the set of positive illusions that enable the individual to adjust to the traumatic event. Through adaptive cognitive distortions, individuals are able to make sense of the trauma, and to regain a measure of self control and sense of worth (Taylor, 1983).

Taylor's (1983) model argues that adaptation in the wake of trauma is a coping process driven by the development of fundamental positive illusions, necessary for the individual to restore their sense of self and control in their world. It has been criticised as a limited view of PTG, with an overemphasis on PTG as a cognitive distortion (McMillen, 2004). This model shares the emphasis on cognitive processing as central to the adjustment process after trauma, with the revised model by Tedeschi and Calhoun. In contrast, the Taylor model argues that adaptation is based on illusory changes, as opposed to authentic personal transformation – these positive illusions enable the individual to recreate their sense of mastery, of self worth

and personal control in the wake of a traumatic experience that rendered their previous beliefs obsolete.

2.2.3 Zoellner and Maercker (2004) - The Janus Face of PTG

In Zoellner and Maercker's (2004) Janus Face theory, PTG is conceived of as a multidimensional concept, composed of both a functional, transformative component and an illusory, self-deceptive component. These two fundamental components of growth after trauma are likened to the two faces of the Roman God, Janus, looking out in opposite directions. This model appears to integrate the opposing theoretical stances of the Tedeschi and Calhoun (2004) model, and Taylor's (1983) theory of adjustment. The Janus Face Model is based on the assumption that perceptions of PTG are, at least partly, distorted positive illusions that enable individuals to counter balance the distress and suffering of trauma (Zoellner et al., 2008). PTG may not be adaptive or constructive for all individuals who report growth (Zoellner et al., 2008); rather the adaptive and maladaptive elements of PTG are regarded as time-related in this model.

2.2.3.1 THE FUNCTIONAL ASPECT OF PTG

The constructive component of PTG corresponds to the concept of growth most frequently studied, and that which is central to the Tedeschi and Calhoun (2004) model. The positive face of PTG, according to Zoellner and Maercker, is evident in the longer term and represents the positive psychological adjustment recorded by individuals after trauma. The positive face of PTG, seen as the "realistic constructive, and self-transforming component of PTG", is assumed to increase with time and be positively related to psychological well-being and adaptation in the long run (Zoellner & Maercker, 2004, p.640).

2.2.3.2 THE DYSFUNCTIONAL ASPECT OF PTG

In contrast, the dysfunctional component of PTG is believed exist in the short term, directly after the traumatic event. It is characterised by the individuals' use of cognitive avoidance strategies and denial in the coping process, to counterbalance the effects of the emotional distress and loss. This negative or illusory component can, however, persist into the long term in some individuals and may impact negatively on their psychological adjustment (Zoellner & Maercker, 2004). The illusory component of PTG is believed to be unrelated to distress and ongoing difficulties in adjustment unless it interferes with coping strategies. Rather, Zoellner and Maercker contend that the illusory component of PTG can function as a short-term palliative coping strategy if it co-exists with deliberate thinking about the traumatic event and active coping efforts. The dual components of PTG are assumed to operate on different time lines and to be differentially associated with psychological adjustment to trauma (Zoellner & Maercker, 2006). The illusory component is thought to decrease in the face of the coping efforts that the individual has employed over time.

The contradictory evidence observed for the association between PTG and well-being may arise out of the diverse cognitive factors involved in the process of growth post-trauma and that are operational at different time periods in the coping process (Zoellner et al., 2008). The authors argued for preliminary evidence in support of the two-component model from studies that examined the relationship between perceived PTG and coping styles (cited in Zoellner & Maercker, 2006). Partial support for the dual components of PTG has been offered in a recent study of the adaptive value of PTG (Hobfoll et al., 2007), and the possibility that the illusory and transformative components may interact in a time-related manner has been raised by several authors (Nolen-Hoeksema & Davis, 2004; Tedeschi, Calhoun & Cann, 2007).

2.3 A FRAMEWORK OF PTG

The process by which PTG develops and the factors influencing PTG, differ from model to model, yet certain assumptions can be made regarding the perception of growth post-trauma (Maercker & Herrle, 2003):

2.3.1 The degree of exposure to trauma is linked to PTG. A certain degree of severity of the trauma is thus necessary for PTG to occur.

2.3.2 The traumatic experience has a devastating effect on the individual's prevailing belief system. The individual's assumptive world is challenged and invalidated by their experience of trauma (Calhoun & Tedeschi, 2006; Janoff-Bulman, 1992; Park & Helgeson, 2006).

2.3.3 In the aftermath of the trauma, the individual begins to make sense of the event, to reconstruct meaning and their value system, taking into account their experience (Swickert et al, 1998). Several theories account for the process by which individuals' cope, restructure their assumptions about their self and their world, and create meaning out of their experience. Within the framework of PTG, the emphasis is on cognitive adaptation and the cognitive processes necessary for rebuilding of the assumptive world (Affleck & Tennen, 1996). There is empirical evidence for the role of cognitive processing in the aftermath of trauma (Helgeson et al., 2006; Weinrib et al, 2006). Deliberate rumination is believed to signify the individual's cognitive engagement with the effects of the trauma on their world (Cobb et al., 2006).

2.3.4 Central to the complexity of the model and the measurement of posttraumatic growth is the concept of PTG itself. PTG is a multidimensional construct that incorporates a cluster of

changes in the individual's perception of the self and their world view, as well as perceived changes in their behaviour and social interactions with family and friends. However, personal growth for one individual does not necessarily have the same meaning as that for another individual, even though there are striking commonalities in the responses of trauma survivors. There are also many factors that influence the process of posttraumatic growth, and several domains of growth that can make up PTG.

2.3.5 The process of PTG occurs over time, and may reflect different patterns of adjustment at different times. With regard to these various trajectories of growth, initial reports of growth may reflect illusory growth that serves to comfort the individual, and be translated into constructive, personally meaningful growth in the longer term (Tedeschi, Calhoun & Cann, 2007). Different pathways to growth may arise from the various factors in the PTGI, and from the individual variables. In turn, different relationships between PTG and well-being may be found at different times in the aftermath of trauma" (Calhoun & Tedeschi, 2006). Theoretically, PTG is a complex and multifaceted psychological concept.

2.4 PTG AND PSYCHOLOGICAL ADJUSTMENT

Multiple factors are assumed to play a role in the individuals' adjustment process after highly distressing events. Of great interest to both researchers and therapists is the question of whether PTG is related to greater well-being after trauma, or to reduced psychological distress (Helgeson et al., 2006). In fact, some theorists have suggested that without any relation to well-being, PTG is no more than an interesting phenomenon (Zoellner & Maercker, 2006).

2.4.1 The Role of PTG

There is no clear evidence that the perception of PTG alleviates psychological distress. With regard to well-being, PTG research is characterised by empirical evidence that is often ambiguous and inconclusive (Linley & Joseph, 2004; Helgeson et al, 2006). Contradictory findings regarding the relationship of PTG to positive adjustment have emerged mainly from cross sectional studies (Zoellner & Maercker, 2006). Studies have also examined PTG in samples that have experienced a multiplicity of traumas and assessed respondents at different stages in their coping process. This may account for a significant amount of the variability in findings. It has been established that growth is more strongly related to positive outcomes when time since trauma is controlled (Park & Helgeson, 2006). Moreover, studies have defined psychological well-being or adjustment after trauma in many different ways – looking at measures of well-being or indicators of the absence of psychological distress. This has complicated the study of the understanding of how PTG is related to adjustment and well-being.

Over time, the relationship of personal growth to psychological and physical well-being is also believed to change (Helgeson et al., 2006). Most longitudinal studies find some evidence of a positive association between PTG and adjustment, and this may point to a non-linear or curvilinear relationship between PTG and adjustment (Zoellner & Maercker, 2006). From their research with breast cancer survivors, Lechner et al. (2006) suggested that PTG is differentially related to the levels of distress experienced by the individual as PTG develops and changes over time. The perceptions of growth by individuals at differing stages within their coping processes may also contribute to the possibility of a non-linear relationship between PTG and adjustment (Zoellner & Maercker, 2006). The relationship of perceptions of PTG to psychological well-being is a complex issue, and subject to the influence of a

variety of factors, including individuals' coping responses, their pre-existing resources and personality characteristics, and the characteristics of the trauma, among others.

Some studies have relied on evidence of the positive correlation between PTG and psychological distress to refute the adaptive role of PTG, and these have portrayed PTG as a dysfunctional coping strategy (Zoellner & Maercker, 2006). A study of bone marrow transplant recipients indicated that individuals who perceived greater distress, were more likely to report greater PTG, in line with the assumption that greater subjective distress is associated with greater PTG. But Widows et al. argued that these perceptions of growth represented positive illusions, motivated by temporal comparisons of the self before and after the trauma, as opposed to actual changes in psychological well-being. Another study found that individual's reports of growth were not motivated by self presentation concerns in a sample of women exposed to a range of stressful life events, not necessarily trauma (Weinrib, Rothrock, Johnsen & Lutgendorf, 2006). The complexity of the relationship of PTG to psychological well-being is evident from the conflicting evidence yielded by studies of PTG.

2.4.2 Measurable Change

PTG is conceived of as the by-product of a challenging and painful coping process, the hallmark of which is the individual's integration of the trauma and its impact into their beliefs and worldview. Central to the integration is the individual's cognitive processing of the experience, and their rebuilding of an assumptive world to incorporate the traumatic experience, as well coping with the vulnerability, pain and loss that have accompanied it (Janoff-Bulman, 2004; Tedeschi & Calhoun, 2004). It is through this process that the individual is able to perceive growth, characterised by a higher level of functioning post-trauma (Linley & Joseph, 2004; Zoellner & Maercker, 2006). The basis of PTG is thus the

subjective perception of a qualitative change in psychological functioning; a sense of personal transformation (Janoff-Bulman, 2006; Zoellner & Maercker, 2006).

There is great debate as to whether PTG is related to observable and measurable changes in behaviour and improved well-being in the individual's life, or whether reports of growth are positive illusions that serve to alleviate distress. Some aspects of growth may not manifest in overt behavioural changes (Park & Lechner, 2006). It may be argued that the perceptions of growth are as important for the individuals' quality of life and psychological adjustment as the changes in actual behaviour (Park & Helgeson, 2006). Even if PTG is no more than a self-enhancing illusion that buffers distress, it may play a pivotal role as a coping mechanism to facilitate individuals' positive adjustment after trauma (Westphal & Bonnano, 2007). It has also been argued that cognitive adaptation after a traumatic event must be translated into active behaviour in order to restore the individual's sense of control and safety in the world, and thus provide real benefit (Hobfoll, Hall, Canetti-Nisim et al., 2007). For example, individuals who were able to transform their growth beliefs into behavioural outcomes were better able to experience the protective benefit of PTG (Hobfoll et al., 2007).

Lack of clarity with regard to the relation of PTG to psychological health and well-being is apparent throughout the literature. Recently, biological evidence for the basis of PTG has been published. Rabe, Zoellner, Maercker and Karl (2006) found evidence of greater relative frontal cortical activation that corresponded with greater perceived PTG in a sample of motor vehicle accident survivors. This frontal cortical activity was assumed to be associated with approach-related motivational tendencies and positive emotion in this study of survivors of motor vehicle accidents with and without PTSD (Rabe et al., 2006). Milam (2006) also found biological evidence for higher CD4 counts over a period of time associated with PTG for

Hispanics who were HIV positive. Milam's findings have suggested that PTG is a positive psychological resource that may buffer the effects of physical illness. While the incidence of PTG is well-supported by research, the adaptive significance of PTG remains unclear.

2.5 KEY MEASUREMENT ISSUES

2.5.1 Validity of PTG

Whether PTG is real or illusory is at the core of significant debate on the topic. What does growth mean in the aftermath of trauma? Across three independent studies, Frazier and Kaler (2006) found little evidence for the validity of reports of posttraumatic growth. These authors concluded that perceptions of PTG correspond to motivated positive illusions, or cognitive distortions that enable the individual to cope with their traumatic experience (Frazier & Kaler, 2006). It is perhaps noteworthy that not all the subjects had suffered severe traumatic experiences in the Frazier and Kaler studies. This may be a limiting factor given that psychological growth is more likely to occur after a severe experience of trauma that is painful and significantly challenging to the individuals' coping abilities (Park et al., 1996; Tedeschi & Calhoun, 2004).

Perceptions of PTG may consist, even if only in part, of positive illusions that are integral to the coping process (Taylor, 1983; Zoellner & Maercker, 2006) and that are considered to be adaptive in that they enable individuals to cope with the emotional distress of the trauma (Frazier & Kaler, 2006). Along with buffering the effects of emotional upheaval, the positive illusions may be adaptive as they assist individuals' to find meaning in their traumatic experience (Janoff-Bulman, 2004; Taylor et al., 2000). Positive beliefs may also impact directly on health behaviours and social networks that in turn, enable the individual to cope

more effectively (Taylor et al., 2000). The lack of validity for reports of growth may be due in part to this illusory nature of PTG.

Certain types of growth may not be adequately assessed through self-report measures, even though it may be experienced as real and beneficial to the respondent. An example is that of psychological preparedness, in which individuals who have reconstructed their assumptive world to accommodate the trauma may be better prepared to deal with another trauma (Janoff-Bulman, 2004). Another possibility is that of changed health behaviours, such as in cancer patients who have adapted their physical and health care as a result of their illness (Stanton, Bower & Low, 2006).

It is evident that the process of PTG is complex and subject to an array of factors that may influence and moderate PTG (Park et al, 1996). PTG is also a highly subjective experience and yet, survivors of traumatic experiences report perceptions of growth that are consistently and remarkably similar. To establish the validity of these growth reports is empirically challenging. Perhaps most important of all is the individual's perception that growth has occurred, as this may have the greatest influence on well-being and adjustment after trauma, whether the perceived growth is real or not.

2.5.2 Limitations of Studies

There has been a proliferation of empirical studies in the past two decades. Most of the studies have been cross sectional in nature, limiting researchers' ability to determine causality. Most have also focused on PTG in samples of individuals who have experienced a specific type of trauma. Traumatic events have varied from sudden, relatively acute events to longer term, chronic stressors and there have been significant differences in the severity (both

objective and subjective) of trauma tic events (Zoellner & Maercker, 2006). It is possible that adjustment processes are influenced by these variables. Given that different stressful experiences can lead to different consequences (Park & Lechner, 2006), PTG may be similarly related to the type of event. Studies have identified a host of moderator variables and correlates that may influence the perceptions of PTG. These have included time since the traumatic event, age and gender, among others.

Even across the studies, PTG has been defined and measured differently. Some studies have used open-ended questions or interview forms, while others have made use of the standardised instruments available (such as the Posttraumatic Growth Inventory, Stress Related Growth Scale and Benefit Finding Scale). Different inventories of growth also produce different domains or dimensions of growth (Linley & Joseph, 2004; Park & Lechner, 2006). Furthermore, there is a lack of agreement with regard to the specific dimensions of growth that constitute PTG (Calhoun & Tedeschi, 2006; Park & Lechner, 2006). Different measures of growth have also been reported to produce different results within the same study (Park & Helgeson, 2006). This has highlighted the complexity of the empirical study of PTG.

2.6 KEY FACTORS IN THE PROCESS OF PTG

As a psychological construct, PTG may represent genuine psychological growth, or merely adaptive, self-enhancing illusions. From recent evidence, perceptions of growth post-trauma appear to be partly illusory in nature (Stanton et al., 2006; Znoj, 2006). Regardless, it is well established that individuals who have experienced trauma have consistently reported higher growth scores and less global ratings of change than individuals who have not faced trauma (Stanton et al., 2006). PTG is more than a coping mechanism, although it may correspond to

adaptive coping strategies as evidenced by the positive correlation between coping styles and PTG (Rosier & Powell, 2006). PTG is prevalent; its meaning and role in the process of recovery after trauma for the individual, remains to be clarified.

PTG is perhaps best conceived of as a multidimensional concept that may be moderated and enhanced by several factors (Morris, Shakespeare-Finch, Rieck & Newbery, 2005; Taku, Cann, Calhoun & Tedeschi, 2008). In the proliferation of research on PTG, studies have sought to isolate and identify the correlates and predictors of PTG, with mixed results (Cordova et al, 2007). Focussing on different samples and traumatic events, researchers have examined the factors that facilitate or hinder the perception of growth, and have yielded many contradictory and inconclusive results (Cordova et al., 2007; Stanton et al., 2006). Factors of interest have included: age, gender, marital status, perceived threat, time since trauma, personality traits and coping styles, and perceived social support, among others (Cordova et al., 2007; Helgeson et al., 2006; Linley & Joseph, 2004). Factors identified as important in the growth process have been grouped according to individual characteristics, characteristics of the traumatic event, elements of the coping process, both cognitive and emotional, and the influence of the social context (Calhoun & Tedeschi, 2006). There also exists the potential for changes in different areas of the person's life, these being the domains of growth. Within the literature review, several key factors in the process of PTG will be discussed: the domains of growth (or factors), the impact of individual characteristics, the role of emotional distress, characteristics of the traumatic event, and socio-cultural factors.

2.6.1 Domains of Growth

Positive changes after trauma can manifest in different areas of the individual's life. These domains of PTG underpin the five factor model proposed by Tedeschi and Calhoun (1996).

Evidence has supported PTG as a multidimensional concept (Morris et al., 2005), and the PTGI's five factor structure has been verified by confirmatory factor analysis (Taku et al., 2008).

The different domains of growth may be subject to the influence of other variables that may in turn moderate PTG. These can include contextual factors that affect the individuals' experience of trauma as well as interpersonal and intrapersonal characteristics. Theorists have questioned whether the same process of growth can account for the different types of positive changes, and whether the five factors of growth represent the spectrum of positive changes that may be perceived by individuals after trauma (Butler, 2007; McMillen, 2004). Although PTG is considered to be a multilayered construct that may encompass many levels of change - relational, emotional, cognitive and even behavioural - the majority of studies have used composite scores and not factor scores to examine PTG (Morris, Shakespeare-Finch & Scott, 2007).

2.6.2 Individual Characteristics and PTG

2.6.2.1 GENDER

Across studies, women are more likely to report PTG than men (Linley & Joseph, 2004). This is consistent with coping studies that demonstrate that women engage in more positive reappraisal and emotion-focused coping strategies than men (Helgeson et al., 2006; Stanton et al, 2006). Women also tend to make up a larger percentage of the sample sizes, and this may confound the relationship between gender and PTG.

Within their initial testing of the PTGI, Tedeschi and Calhoun (1996) found evidence of a significant effect size, with women reporting higher levels of PTG than men. They suggested that women and men differ in their responses to trauma. In particular, women scored higher on the subscales pertaining to relationships and spiritual beliefs (Tedeschi & Calhoun, 1996).

2.6.2.2 AGE

Evidence for a relationship between age and PTG in the literature is contradictory. Although many studies have yielded non-significant findings, several have reported a negative association between age and PTG (Cordova et al., 2007; Helgeson et al., 2006; Stanton et al., 2006). Stanton et al. suggested that in younger adults the cancer diagnosis may be experienced as more distressing and thus require greater readjustment, both psychologically and emotionally, than in older patients, thereby leading to higher PTG scores. Age was a small but significant predictor of PTG in a sample of students exposed to trauma (Morris et al., 2005). Aside from age as a factor, the impact of the individual's stage of life and maturity on the process of PTG has been neglected (Park & Lechner, 2006).

2.6.2.3 OTHER CHARACTERISTICS

Several studies showed higher rates of PTG among ethnic minorities (Helgeson et al., 2006), but without clear indicators as to why non-whites derived greater benefit from their experience of trauma. PTG may be interpreted differently across ethnic groups, especially as the racial composition of the sample appeared to moderate the positive association between perceived benefit and improved mental health (Helgeson et al., 2006).

Previous exposure to trauma may be a confounding variable, but the evidence in this regard is inconsistent. Lyons (1991) noted that some studies infer that prior exposure to trauma may lead to poorer adjustment to additional traumatic events, and that the effects of trauma may be compounded. In the context of multiple traumas, PTG may be delayed or virtually unattainable for the individual. This has been referred to as the 'pile-up" of losses (Harvey, Barnett & Rupe, 2006). In contrast, there is the contention that the experience of coping successfully with one form of trauma may predict better adjustment to any subsequent traumatic experience in the form of psychological preparedness (Janoff-Bulman, 2006).

2.6.2.4 COPING STYLES AND PERSONALITY VARIABLES

Various coping strategies have been theoretically and methodologically linked to PTG. Zoellner and Maercker (2006) argue that PTG is predicted by distinct coping strategies and aligned the type of coping style with the two conceptually distinct faces of PTG. Thus, positive reappraisal, active mastery and problem focused coping are assumed to be associated with the positive component of PTG, and denial, and emotion focussed coping associated with the illusory, negative component of PTG (Zoellner & Maercker, 2006). Different cognitive processing styles employed by individuals may differentially affect the development of PTG.

Several studies have found that positive reappraisal and openness to new experiences are positively correlated to self-reported PTG (Linley & Joseph, 2004). These coping strategies, alongside acceptance coping, are believed to promote adaptation to the post trauma circumstances and the individual's ability to grow from adversity (Zoellner & Maercker, 2006). Groups of breast cancer patients who utilised more adaptive coping strategies also perceived the greatest benefit from their experience of cancer, as did those who did not

engage in adaptive coping strategies (Lechner et al., 2006). Three personality characteristics have been identified as important in the perception of PTG: optimism, religiosity and neuroticism (Helgeson et al., 2006). A positive relationship was found between benefit finding and optimism and religiosity, although effect sizes were small. In addition, the coping strategies of positive reappraisal, acceptance and denial have been positively linked to finding benefit (Helgeson et al., 2006). Self-worth has been shown to be a strong predictor of growth (Engelkemeyer & Marwit, 2008). These personality characteristics appear to form part of the coping process and are integral to the making meaning out of the trauma.

2.6.3 Emotional Distress and Growth

2.6.3.1 PTG AND PSYCHOLOGICAL WELL-BEING

PTG does not appear to have a direct linear relationship to the presence or absence of emotional distress. Individuals who perceive growth in the wake of the traumatic event also report suffering and significant emotional distress. PTG does not appear to ameliorate the symptoms of emotional distress after trauma, and across studies, the presence of PTG is not related to the absence of psychological distress. Rather, growth and distress appear to coexist in the aftermath of the trauma in a bivariate perspective (Davis et al., 1998; Laufer & Solomon, 2006; Tedeschi & Calhoun, 2004). This two-dimensional perspective incorporates the co-existence of growth and psychological distress as independent dimensions of well-being and autonomous outcomes of the coping process (Laufer & Solomon, 2006; Park & Helgeson, 2006). Moreover, studies have used different measures and definitions of psychological well-being, adjustment and/or distress.

Recent evidence has challenged the commonly held notion that growth and well-being are related in a linear manner. Women facing life-threatening illness, who reported high or low benefit finding showed better adjustment to the trauma than those women who reported moderate benefit finding, and provided support for a curvilinear relationship between benefit finding and psychosocial well-being (Lechner et al., 2006). Studies of personal growth after trauma show that the majority of survivors of traumatic events report finding benefit from their experience. The experience of growth may help survivors to cope with distress (Linley & Joseph, 2004), and this may be associated with positive affect (Park & Helgeson, 2006; Weinrib et al., 2006). This association does not, however, counteract the individuals' experience of negative consequences of trauma. PTG can also not be determined to be the origin of psychological well-being after trauma.

2.6.3.2 PTG AND PTSD

There is no empirical support for a systematic linear relationship between PTG and PTSD (Zoellner & Maercker, 2006). Studies have found either no relationship between PTG and PTSD, or else a positive correlation (Park et al., 1996; Zoellner & Maercker, 2006). McMillen et al (1997) in their longitudinal study of survivors of three types of trauma, found that reports of PTG at four to six weeks after the event were predictive of fewer PTSD symptoms three years later. However, this study did not make use of a standardised measure of PTG; perceived benefit was measured by means of a single open-ended question (McMillen et al., 1997). In Tedeschi and Calhoun's (2004) revised model of PTG, growth and emotional distress are assumed to co-exist as two independent states of well-being, and from the research, it would appear that PTG and post-traumatic stress are also independent psychological states.

2.6.3.3 PTG AND DEPRESSION

Although traumatic life events may increase the individual's risk of depression, the majority of individuals do not develop depression in the aftermath of the traumatic event (Connor, 2006). Accordingly, no direct relationship has been found between PTG and depression in the majority of cross sectional studies (Zoellner & Maercker, 2006). A significant negative correlation was found between depression and PTG in a sample of survivors of sexual assault (Frazier et al., 2001). The findings also suggested that the participants who perceived benefits between the assessment periods, at two weeks and then 12 months post-assault, were less likely to be depressed (Frazier et al., 2001).

2.6.4 Characteristics of the Traumatic Event

2.6.4.1 LEVEL OF THREAT

Greater levels of perceived threat have been associated with higher PTG scores (Helgeson et al., 2006). The more severe the trauma, the more likely individuals were to report perceived growth as a result of their experience. Severity of the trauma is also an important predictor of post-trauma adjustment (Lyons, 1991). A significant level of disruption and distress as a result of the trauma, is deemed necessary to shatter the individual's core assumptions, and prompt the restructuring of emotional and cognitive structures necessary for the perception of PTG (Morris et al., 2005).

Both objective and subjective trauma severity have been associated with higher PTG (Zoellner et al., 2008). While objective ratings of trauma severity have significantly predicted levels of PTG, subjective assessments of trauma severity have predicted PTG over and above the objective ratings (Morris et al., 2005). This held true even after the variance of other

factors was taken into account (such as age, time since trauma). The threat of mortality is considered to be a potent stimulus for personal change and the search for meaning after trauma. Accordingly, mortality salience has been identified as a potentially critical factor in the perception of growth: the greater the threat to life, the greater the experience of trauma and the greater the possibility for growth (Calhoun & Tedeschi, 2006). However, significant variability exists in subjective appraisals of traumatic event that further impact on the individual's experience of the trauma and their recovery. Perceived severity of trauma may be positively related to increased reports of growth, but the level of threat and stressfulness may also overwhelm the individual's capacity to change and recover (Stanton et al, 2006).

Previous exposure to trauma has been associated with greater distress to any subsequent trauma, and it is assumed that greater distress promotes higher levels of PTG (Swickert et al., 2006). Thus previous exposure to trauma may also impact on PTG, depending on the individual, the event and other factors.

2.6.4.2 TIME SINCE THE TRAUMA

The impact of time since the traumatic event on PTG has not been fully examined within previous research studies (Morris et al., 2005). In the revised model, PTG is believed to develop over time through the cognitive processing necessary for schema revision and reconstruction. However, there exists little empirical evidence for this viewpoint (Park & Lechner, 2006; Tennen & Affleck, 2002). The assumption that the level of PTG will increase with time has also not been consistently supported by PTG studies (Wortman, 2004). Moreover, it is possible that it is the "intervening events and processes" that influence PTG, rather than the amount of time that has passed (Linley & Joseph, 2004, p.17).

Typically, studies have assessed growth in samples several months or several years **after** the traumatic event has occurred. It has been observed that the greatest increases in PTG were reported between two weeks to two months post trauma, and that levels of perceived growth remained stable through the first year after the trauma (Linley & Joseph, 2004). As early as two weeks after the experience of sexual assault, victims have reported positive changes attributed to their experience (Frazier et al., 2001). Not all survivors within this study, however, were able to maintain these changes over time.

Janoff-Bulman (2006) has supported the development of PTG over time (weeks, months, and years). After the initial emotional distress, the individual is believed to intentionally engage with the traumatic event and its impact through cognitive processing (the basis rebuilding the schematic structures). Accordingly, Janoff-Bulman views time as a crucial yet understudied variable in the PTG research. Linley, Joseph and Goodfellow (2008) have presented a possible temporal context, in three stages, for the cognitive-emotional processing believed to underpin the development of PTG. In this model, the initial stage of cognitive and affective processing is characterised by disorganisation after the trauma, and the initiation of the search for meaning in the event. Over time, into the second stage, the processing of the event continues, and positive and negative changes become increasingly dissociated. In the final stage, positive and negative changes become inversely correlated in either a positive or negative manner, based on the development of new meaning and schematic frameworks (Linley et al., 2008). Here the presence of positive meaning, as opposed to the absence of negative meaning, is seen as the key variable in adaptation after trauma.

By all accounts, growth reported soon after the trauma may reflect illusory change, as opposed to true psychological growth (Park & Lechner, 2006). These positive self-enhancing

illusions may exist as a temporary buffer that enables the individual to manage the emotional distress of trauma (Calhoun & Tedeschi, 2004; Helgeson et al., 2006; Westphal & Bonnano, 2007). Posttraumatic growth reported after a greater length of time since the trauma occurred is considered to represent actual PTG. In line with this thinking, PTG has been strongly related to decreased depression and increased positive affect when more than two years had passed since the traumatic event (Helgeson et al., 2006). The exact timing of the development of actual growth is unclear. Contradictory evidence has also been observed regarding time since treatment and PTG in cancer survivors (Stanton et al., 2006). The relationship between time since the event (or diagnosis) and reported PTG was greatest in the first one or two years after the event (or diagnosis), as opposed to several years. The timing of assessment of PTG may be a further complicating factor in the study of PTG, as the pathways to recovery and the evolution of PTG may differ from individual to individual (Lyons, 1991). It is obvious that the temporal course of growth is still very much open to debate.

2.6.4.3 TYPE OF EVENT

The majority of studies on PTG after trauma have assessed a sample exposed to a specific type of traumatic event, such as breast cancer, terrorist attacks or motor accidents, to name but a few. Different types of traumatic events may lead to dissimilar types of PTG, given evidence that different stressors can lead to different psychological sequelae (Park & Lechner, 2006). Only a few studies have examined PTG by event type (Linley & Joseph, 2004), but only one found evidence for differences in PTG after three types of events. McMillen et al. (1997) compared perceived benefits reported by survivors of three types of disaster: a tornado, a plane crash and a mass killing in the United States. Tornado survivors reported the highest rates of perceived benefit and the plane crash group the lowest perceived benefit. Those survivors who reported high exposure to the traumatic event along with PTG, showed

the greatest recovery from PTSD (McMillen et al., 1997). The authors suggested that individuals who perceived the greatest amount of benefit were able to cope more effectively due to complex cognitive self-presentations and a predisposition to optimism. In addition, the community context was believed to have an impact on PTG, in that social networks may have been more supportive after certain types of traumatic events. For example, in the case of the tornado, the victims needed tangible aid. People who received the greater amount of support may have been more likely to report enhanced closeness with others, and in turn, the support may have allowed survivors greater opportunities to emotionally and cognitively process the event, to make sense of it, and in turn, report PTG (McMillen et al., 1997). However, the differences in these growth scores may not have been function of the event type, but rather related to the samples' proximity to the event in question (Linley & Joseph, 2004; McMillen et al., 1997).

In a review of studies, Helgeson et al. (2006) found that the nature of the stressor was a significant predictor of psychological distress. Perceived benefit was related to less distress in samples that had experienced health-related trauma and unrelated to distress in the samples of personal trauma (including violence and natural disasters). With regard to the moderating effect of PTG, significant variability was evident in the effects of the type of the stressor on psychological well-being across studies (Helgeson et al, 2006). Zoellner and Maercker (2006) suggested that adaptation processes are different for different types of events, and that perceptions of growth play a different role for different types of traumas.

The nature of the traumatic event has been included in the model of PTG (Tedeschi & Calhoun, 2004), but without detailed evidence for its role. The experience of a traumatic event is intensely personal and distinctive for each individual, as is the perception of PTG. The

individual's experience of a traumatic event, even of the same type, is highly subjective and unique. The characteristics of traumatic events also vary. The duration of the traumatic event may be acute or chronic, the degree of control that the individual has over the situation may vary from none to complete, and certain events may involve the actions of others (Helgeson et al., 2006). Added to the mix are interpersonal and intrapersonal factors that also impact on the coping process in the aftermath of specific types of trauma. Such event characteristics include the degree of terror or horror experienced, the unexpectedness of the event, the duration of the experience, the loss of resources involved, physical injury or harm suffered, whether the trauma was natural or man-made in origin, among others (Lyons, 1991). The individual's perception of PTG may be influenced by the specific type of traumatic event that has triggered it.

Sumalla, Ochoa and Blanco (2009) have argued that cancer is distinct from other traumas and that PTG interacts with the "ecology" of the characteristics of the trauma in an event-specific manner, when compared to other traumas. The authors have identified the distinguishing features of cancer as a traumatic event as:

1. Difficulty identifying a single stressor in the cancer diagnosis and treatment;
2. The internal nature of the cancer;
3. The temporal dimension of the illness, in that the threat to life is not often immediate but focused on the future;
4. The temporal course of the illness that renders it more difficult to establish the onset and conclusion of the experience;
5. The greater perceived control that the individual has over the course of treatment. (Sumalla et al., 2009)

In contrast, the acute trauma is conceived of as discrete, unpredictable and uncontrollable, typically external in nature, a severe threat to personal safety and with a specific onset and termination of the event. These authors have suggested that distinctive growth patterns may exist in samples affected by cancer, due to the distinctive features of the trauma.

Harms and Talbot (2007) found that growth was a more common recovery experience than distress in a study of survivors of serious road accidents. They suggested that the type of trauma played a role in these findings. Road accidents represent single-incident traumatic events that once survived, may no longer present a threat to the individual, especially with time and the assimilation of the event (Harms & Talbot, 2007). For bereaved parents who reported perceived benefits after the loss of their child, the mode of death appeared to influence PTG, alongside social support (Polatinsky & Esprey, 2000). The opportunity to anticipate the death of their child may have enabled parents to perceive greater benefit, as higher PTG scores were consistently associated with illness versus other possible causes of death, such as accidents, suicide or homicide (Polatinsky & Esprey, 2000).

Samples who have had vicarious exposure to trauma have also reported PTG. Following indirect exposure to the September 11 terrorist attacks in America, PTG was reported in two separate samples, in particular by the participants who shared the core values and beliefs of those who had been traumatised (Linley, Joseph, Cooper, Harris & Meyer, 2003; Swickert et al., 2006). However these reports decreased with time, suggesting a possible difference in the temporal course of PTG between direct and indirect exposure to trauma (Swickert et al., 2006).

With regard to PTG, the **characteristics** of the subjective experience of the traumatic event are believed to influence the perception of PTG, as opposed to the **type** of event itself (Linley & Joseph, 2004). Moreover, in the process of PTG, it is not the type of event but what happens in the aftermath of the traumatic experience that is presumed necessary for growth (Tedeschi & Calhoun, 2004). The focus has been on the individual's subjective appraisal of the trauma. Apart from the study by McMillen et al., (1997) and the comparison across studies in several reviews, the moderating effect of the type of traumatic event on PTG has not been empirically examined.

2.6.5 Socio-Cultural Factors

2.6.5.1 Social Support and PTG

Social support is assigned a key role in the individual's process of coping in the aftermath of trauma (Wilson & Boden, 2008), and in the development of PTG (Tedeschi & Calhoun, 1996). Social support by definition includes the social relationships and interactions that provide actual assistance and feelings of attachment, and that are perceived as caring and loving (Yap & Devilly, 2004). As a psychosocial resource, social support may provide a buffer that protects the individuals' physical and psychological well-being (Yap & Devilly, 2004). The traumatic event and the individual's response takes place within the context of important others, these being the individual's primary reference groups (Calhoun & Tedeschi, 2006). The responses of others - spouses, family and friends - and the assistance of role models who have themselves recovered from trauma, are important factors in assisting individuals to deal with their experience of trauma, to begin to actively process it and to find benefit in the experience (Calhoun & Tedeschi, 2006).

PTG has been positively associated with social support. In particular, in women with maternal histories of breast cancer (Mosher, Danoff-Burg & Brunker, 2006), in a study of college students who faced a variety of traumatic events, (Park et al., 1996), and in a sample of prostrate cancer survivors (Kinsinger, Penedo, Antoni, Dahn, Lechner & Schneiderman, 2006), PTG was positively correlated with social support. Close contact with a positive role model has also been associated with higher levels of PTG (Cobb et al., 2006). Survivors who perceived that their social networks were more helpful reported more positive personal changes (Frazier et al., 2004).

The perception of support received may be more important than the actual amount of support received. Social support may play a smaller role in growth post-trauma than suggested by the literature, and also may influence PTG via other factors, such as personality traits (Wilson & Boden, 2008). The relationship between personality dimensions and social support may be more complex than is evident from the research.

2.6.5.2 TYPES OF SUPPORT

Perceived social support from family, friends and significant others, is an essential determinant of positive adjustment following trauma (Kinsinger et al., 2006). The individual's cognitive processing of the impact of the trauma also takes place within the interpersonal context of social networks and relationships, and the prevailing viewpoints of these groups (Calhoun & Tedeschi, 2006; Weiss, 2004). Social support may facilitate PTG by enabling individuals to engage in this cognitive processing - to reconstruct their fundamental schemas through disclosure and to develop their life narrative within supportive social networks (Tedeschi & Calhoun, 2004; Weiss, 2004). Social support can include emotional comfort and support, as well as the provision of alternative narratives of the experience and the modelling

of coping behaviour (Weiss, 2004). Survivors who perceive more support tend to report increased closeness (McMillen et al., 1997; Tedeschi & Calhoun, 2004). Increased support from others may in turn provide opportunities for survivors to cognitively process the effects of the trauma and to develop new assumptions about their world (Tedeschi & Calhoun, 2004). The availability of emotional support within social groups may be linked to the strengthening of relationships, an important domain of PTG (Thornton & Perez, 2006).

Specific forms of support have been identified as important in the process of PTG and these included the support of role models who have faced a similar trauma and who have perceived positive changes, and marital social support (Weiss, 2004). Marital social support, rather than general social support, was significantly related to perceptions of growth in a sample of breast cancer survivors (Weiss, 2004). The individual's satisfaction with the support received is also a significant factor (Park et al., 1996; Polatinsky & Esprey, 2000). Elements of the social network that may have a particular influence include the responses of significant others, the congruence of thoughts about positive outcomes between the individual and others, and the presence of role models (Calhoun & Tedeschi, 2006).

The causal nature of the relationship of social support to PTG is unclear. Perceived social support may function as a protective factor in the development of PTG and may facilitate PTG as is proposed in the Tedeschi and Calhoun model. Or, increased intimacy and emotional support may be the outcome of the experience of trauma and an expression of PTG (Linley & Joseph, 2004). The possibility also exists that for some individuals, the negative responses of other people in their social environment and lack of support may actually hinder their recovery and thus not promote their ability to perceive PTG in the aftermath of trauma.

2.6.5.3 THE CULTURAL BIAS OF POSITIVE THOUGHT

The perception of PTG after trauma may be, in part, an artefact of cultural bias, characteristic of westernised cultural systems such as those prevailing in the United States, where the majority of the research has been conducted. This has been labelled the "tyranny of positive thinking": the idea that the prevailing social norms and religious beliefs within the societies in which the research has taken place may foster the notion of growth out of adversity and the need to perceive benefits, especially in more westernised cultures (Lechner & Antoni, 2004; Park & Lechner, 2006). The cultural context is likely to have an impact on several components of the process of PTG, including pre-trauma schemas, beliefs and goals, the coping process after the traumatic event, aspects of rumination and the availability and nature of social support (McMillen, 2004). In this manner, culture is likely to play a role in the perception of PTG

Individuals may feel social pressure to report growth as a result of trauma due to the popularisation of the notion through the media. It has been argued that reports of PTG may reflect adherence to a cultural script and that this is representative of pseudo-growth (Lechner & Antoni, 2004; Linley & Joseph, 2004; Zoellner et al., 2008). Cultural differences may have a particular impact on the expression and manifestation of growth. This is in line with the theory of PTG as a self-presentational bias - individuals want to appear to be coping well given their need to adhere to the prevailing social norms that dictate that growth arises out of distress (Frazier & Kaler, 2006). Some studies of PTG in non-Western countries have found much lower rates of perceived growth when compared to those conducted in the United States (Park & Lechner, 2006). The lowest PTGI scores reported were from a sample of victims of crimes in South Africa (M = 40; Peltzer, 2000 cited in Tedeschi & Calhoun, 2004). Contextual differences may have an impact on PTG. The highest scores (M = 83; Tedeschi &

Calhoun, 1996) were recorded in the sample of American college students used to develop the factor structure of the PTGI.

Culture may also influence the individuals' openness to perceptions of PTG, and has been proposed as a possible factor explaining the lower overall PTGI scores from samples outside of the United States (Zoellner et al., 2008). The pressure to cope successfully and find positive outcomes out of adversity may also negatively affect those individuals' whose coping processes does not conform to the culturally accepted pathways of growth and adjustment, and may lead to additional distress for these individuals (Calhoun & Tedeschi, 2006).

2.6.6 The Heart of the Debate

At the very heart of the debate is the question of what reports of growth actually mean for the individual? (Pat-Horenczyk & Brom, 2007; Zoellner et al., 2008). Whether it is an authentic expression of change on emotional, social and behavioural levels after trauma, or merely a cognitive process, whether it is a form of coping or an outcome of the coping process, PTG has been widely researched and theoretically discussed. PTG has been consistently reported by individuals after a wide range of traumatic events. And for the survivor of a traumatic event, PTG appears to have value, whether it is a real or illusory phenomenon. Westphal and Bonnano (2007) argue for the existence of multiple pathways to growth post-trauma and that these resilient outcomes vary in adaptive value across different personalities, social environment and contexts, just as a variety of risk factors exist for the development of post-traumatic stress after trauma. A complex interplay of personal and contextual factors may impact on the individual's experience of growth and distress after trauma (Harms & Talbot, 2007).

Within this study, the validity of reports of PTG was not examined. Rather, the objective was to establish whether individuals in the South African context reported PTG after their experience of a traumatic event and whether this differed according to specific factors across the sample. However, the questionable validity of reports of PTG cannot be completely disregarded and the results should be interpreted cautiously.

2.7 THE SOUTH AFRICAN CONTEXT

The South African context is a unique milieu in and of itself. Stress levels within South Africa have been characterised as very high, and many lifestyle diseases, health-risk behaviours, violence and trauma-related behaviours induce greater stress (Schlebusch, 2004). Based on statistics generated by the government and non-governmental organisations, many South Africans have been exposed to traumatic experiences such as violence, crime and road accidents, as well as severe health threats. This offers a fertile context for the examination of individuals' perceptions of growth after trauma.

2.7.1 Chronic illness and road accidents

Rates of cancer reported to the National Cancer Registry across all South African population groups are among the highest in the world (National Cancer Registry, 2007). For men, the two most common forms of cancer are prostrate and lung cancer, and for women, cervical and breast cancer. According to the national statistics, one in four males and one in five females are likely to be diagnosed with cancer in South Africa (National Cancer Registry, 2007).

With regard to HIV and AIDS infection in South Africa, a National HIV survey estimated that 16.2% of all South Africans from 15 to 49 years of age were living with HIV in 2005

(AVERT, 2009). National estimates based on several surveys suggest that over 5 million South Africans are currently living with HIV, and that the epidemic in South Africa is severe (AVERT, 2009). However, largely due to the social stigma attached to HIV infection as well as other reasons, there is a high degree of non-disclosure about HIV and AIDS within families and communities, and a lack of clear medically substantiated statistics. Furthermore, it is believed that national figures hugely underestimate the number of reported deaths due to HIV largely as a result of misclassification (Nicolay, 2008). South Africa is believed to be experiencing the largest HIV and AIDS epidemic in the world – the total HIV prevalence rate is 12%, whereas 20% of adults between the ages of 20 and 64 are believed to be HIV positive (Nicolay, 2008).

Based on national data, road accidents are one of the primary causes of non-natural deaths in South Africa (Statistics SA, 2006). The Road Traffic Management Corporation (RTMC), in a comprehensive statistical analysis of road incidents from 2003 to 2004, reported the total number of deaths due to road accidents as 12 727 fatalities in 2004. On average, 36 lives are lost every day on South African roads. Of these, 15 are typically pedestrians (RTMC, 2005). More than 7000 people are permanently disabled or maimed as a result of road accidents annually, and more than 100 people are injured due to traffic accidents each day (RTMC, 2005). The overwhelming majority of accidents (90%) are attributed to lawlessness on the country's roads (RTMC, 2005). This gives an indication of the magnitude of the potential public health epidemic. Although there has been relatively little research on the psychosocial impact of road accidents in South Africa, roughly 10% to 50% of accident victims reported symptoms consistent with full-blown PTSD (Peltzer & Renner, 2003). In a study of road accident victims, Peltzer and Renner (2003) found that the emotions of guilt and anger were associated with increased emotional distress and decreased well-being after the accident.

2.7.2 Crime and violence

Communities in South Africa face high levels of violence and crime, even in the post-apartheid decade. Altbeker (2007) has noted that "what makes South Africa's crime problem unique is not so much the volume of crime as its extraordinary violence, with interpersonal violence and an exponential growth in robbery manifestations of this" (p.33). The situation is further hampered by unreliable statistics, differential definitions of crime and violence, and problems of underreporting. Despite these, it is evident that South Africa ranks as a country with one of the highest levels of crime and violence in the world (Altbeker, 2007).

In South Africa, 53 people were murdered per day in 2006; roughly 19 000 people murdered in one year (Altbeker, 2007). More than half a million victims of assault, serious assault or attempted murder and 19 000 murders together with 200 000 robberies and aggravated robberies, 55 000 rapes and 300 000 burglaries each year are reported each year by South Africans (Altbeker, 2007). In 2004, violence accounted for 40% of non-natural deaths compared to 27% for transport accidents and 10% for suicide (Centre for the Study of Violence and Reconciliation/CSVR, 2007). The causes of non-natural deaths in South Africa, according to available statistics, are tabulated in Table 12.

South African Police Services (SAPS) statistics for the period 2003 to 2006 showed a decline in overall violent crime, but the total figures remained exceptionally high: of 2 116 876 incidents of crime recorded in the period 2005 to 2005, 765 189 were incidents of violent crime, roughly 36% of the total (SAPS, 2006). This includes assault, rape, robbery, murder, attempted murder and culpable homicide. Police statistics reported for the period 2000 to 2004 are presented in Table 13. Crime that involved taking the money or property of another person accounted for 60% of the reported crimes in 2006 (CSVR, 2007). Armed robbery is

particularly prevalent, with 80% of robberies involving perpetrators armed with guns in 2000 (Altbeker, 2007), compared to a rate of 20% in other countries. There is a high incidence of contact crimes in South Africa, including murder, rape, assault, car hijackings and armed robbery, and statistics for contact crimes reported in 2007 are presented in Table 14.

Altbeker (2007) has further emphasised that "every single piece of reliable data (*available suggests*) that South Africa ranks at the very top of the world's league tables for violent crime" (p.12). This is reiterated by the Centre for the Study of Violence and Reconciliation's Concept Paper on the Violent Nature of Crime in South Africa (2007). The high level of underreporting suggests that an even greater number of incidents occurred through out the country than was included in the statistics. The consequences of violent crime for the survivor include physical injury or pain, psychological and emotional damage as well as financial costs relating to the loss of money or goods, medical care, counselling and the negative impact on employment (CSVR, 2007). The psychological impact varies from individual to individual and may be influenced by various other factors, such as the nature of the crime, the characteristics of the victim and their coping abilities, personal circumstances, levels of support, financial resources, and previous victimisation, among others (CSVR, 2007).

Violent crime may lead to profound trauma and loss for the victim, and also have a ripple effect on the victim's family and relationships. In a large scale study of householders in the Nelson Mandela Metropole, crime did not have the negative emotional impact anticipated (Moller, 2005). However, only 30% of householders polled in this study reported experience of household crime and 10% had experienced individual crime. Levels of significant stress, however, were attributed to the fear of crime and violence and while victimisation may not

have overtly influenced personal well-being, it appeared to have a greater negative impact on perceived stress and lifestyle restrictions (Moller, 2005).

Of particular interest to this study, is the pervasive nature of crime and violence, to the extent that violence and violent behaviour is entrenched in the South African culture. This "culture of violence" is shown to affect all communities, families and individuals at all social levels. For many victims of crime, the violent crime often takes place in their own home or driveway, in the very place that is supposed to offer them safety and security. Moreover, for many victims is it often impossible for them to ensure that they will not be victimised again – given the high levels of crime and the ruthlessness of criminals, many individuals will be exposed to violent crime on more than one occasion.

2.7.3 PTG in South African Studies

PTG has been reported in two samples of South African origin. Tedeschi and Calhoun (2004) cited the lowest reported PTG scores from a study of criminal victimisation in a South African sample by Peltzer (2000). However, a copy of this research paper could not be sourced for the present study, despite repeated attempts to contact the author. Polatinsky and Esprey (2000) conducted an assessment of gender differences in perceived benefits in a sample of 67 bereaved South African parents, and found that these parents did perceive benefits from their loss. Mothers scored higher on the total PTGI score but this was not statistically significant. As both mothers and fathers were part of a support group from which the sample was drawn, it was suggested that this supportive network played an important role in the perception of benefit (Polatinsky & Esprey, 2000).

There are many personal accounts of South Africans who have struggled with adversity, of individuals who have faced the most horrific traumatic events, and yet have recovered and thrived. A well-known example is that of Alison, a young woman who was brutally attacked in Port Elizabeth, 18 December 1994. She was raped by both her attackers, had her throat slit from ear to ear, almost disembowelled and left for dead in a remote area. She managed to crawl to the road and was rescued by a passing motorist. In her moving story, Alison recounted her ordeal and her journey to healing, and growth. In her words, she has said that "…. so much of who (*she*) was then has helped (*her*) to cope with this trauma. Without realising it, (*she*) had created for (*her*)self a set of ideas and beliefs, a life code if you like, that has helped (*her*) to become a victor and not remain a victim" (Thamm, 1998, p. 242). Despite horrific experiences of crime and violence, through illness and accidents, there have been many survivors such as Alison that have emerged to become role models and public speakers. They have embodied the essence of posttraumatic growth. Through their struggle with their experience of trauma, these individuals have achieved personal growth and accomplishment. In the words of another true South African icon, former President Nelson Mandela, who endured years of incarceration for his anti-apartheid actions, emerged to lead a nation peacefully to democracy, and who has practiced forgiveness and reconciliation: "There are few misfortunes in this world that you cannot turn into personal triumph if you have the iron will and the necessary skill" (Crwys-Williams, 2004, p.65).

2.8 RESEARCH QUESTIONS

In the midst of the inconclusive evidence regarding PTG and the limited number of studies in South Africa, a set of research questions were developed in order to examine perceptions of PTG in a South African sample. Particular attention was paid to the type of traumatic event

and the characteristics of the trauma that may have an impact on PTG. Individual characteristics and perceived social support in relation to PTG were also examined. The research questions are listed below:

2.8.1 Is the age of the participant related to PTG?

It was hypothesised that the age of the respondent would not be correlated with PTG

2.8.2 Are there gender differences in the reported levels of PTG in the sample?

It was hypothesised that women would report higher PTG scores than men.

2.8.3 Is the perceived threat attributed to the traumatic event related to PTG?

It was hypothesised that higher scores of perceived threat would be correlated to higher PTG scores.

2.8.4 Do individuals who have perceived the greatest subjective distress after the trauma report higher levels of PTG?

It was hypothesised that a positive association would be found between reported PTG and subjective distress as measured by the IES-R.

2.8.5 Is there a relationship between PTG and depression, anxiety and stress?

It was hypothesised that reports of PTG would co-occur with reports of stress, anxiety and depression.

2.8.6 Is greater perceived social support related to higher levels of PTG?

It was hypothesised that individuals who reported greater amounts of social support would also report higher PTG scores.

2.8.7 Does PTG vary according to the type of traumatic event that the individual has experienced?

It was hypothesised that the sample would report PTG and that PTG would vary across the different categories of event types.

2.8.8 Does PTG vary according to the time since the traumatic event?

It was hypothesised that time since the trauma would be related to PTG, but not in a linear manner.

3. Methodology

"*The types of growth that people report experiencing depend, obviously, to some extent, on the instrument used to measure growth. Because investigators determine what comprises these scales, the dimensions measured may vary across instruments, and it appears that no particular scale captures all of the potentially important domains of growth or positive change….*"

(Park & Lechner, 2006, p.57)

3.1 SAMPLE

The sample consisted of a self-selected convenience sample of volunteers drawn from local South African communities. Participants were 135 individuals, 18 years and older, who had experienced a traumatic event and were willing to complete questionnaires regarding their trauma. Ages of participants in the study ranged from 18 years to 79 years of age. The mean age of the sample was 39 years. Of the final sample, 106 participants were women (78.5%) and 29 were men (21.5%).

The majority of participants completed the questionnaires in full and submitted these for analysis. A few volunteers made telephonic contact with the researcher to obtain additional information or to discuss their experience. One volunteer, a 64-year-old divorced woman, explained that although she was perfectly willing to help, she had not experienced her recent heart attack as "traumatic". She felt that she would rather have died at that moment, and had

very complicated feelings about her resuscitation and subsequent open heart surgery. She explained a long history of emotional abuse within her previous marriage, a traumatic childhood and ongoing financial and health issues. Another volunteer, a mother whose young child had died, phoned to explain that the pain was still too great, the emotions too raw and the loss too overwhelming to record it on the questionnaire, even though several years had passed. Both were assured of their voluntary participation and thanked for their feedback. Finally, another woman phoned to check that the study was legitimate. She too referred to multiple traumas in her life, and explained that she was still reeling from the effects. She divulged that the trauma that continued to affect her most was that in which she had killed another person. She did not provide details, but did explain that she was currently receiving help and psychotherapy.

Several people who had experienced chronic illnesses declined to participate and returned the questionnaires without completion. Of all potential volunteers, those who had faced criminal victimisation seemed to be most willing to share their story and participate in the study.

3.2 MEASURES

All participants completed a battery of self-administered questionnaires and a basic demographic sheet. The measures included:

3.2.1 Posttraumatic Growth Inventory:

The Posttraumatic Growth Inventory (PTGI), developed by Tedeschi and Calhoun (1996), was used to assess posttraumatic growth. The PTGI measures the extent to which survivors of traumatic events perceive personal growth and positive changes as a result of the trauma

(Tedeschi & Calhoun, 1996). It is a 21-item scale that comprises five subscales pertaining to the different dimensions of PTG.

Three broad clusters of perceived benefits, or domains of growth, were identified by Tedeschi and Calhoun (1996): Perceived changes in the self, changes in interpersonal relationships, and changes in philosophy of life. Further analyses yielded five subscales that measure the five factors of growth, as follows:

- Relating to Others (RO),
- New Possibilities (NP),
- Personal Strength (PS),
- Spiritual Change (SC), and
- Appreciation of Life (AOL).

This measure was designed to compare the responses of men and women of different ages to a variety of traumatic events in different contexts (Tedeschi & Calhoun, 1996). The PTGI yields a total score as well as scores on the five subscales. Subjects rate each item on a Likert scale from 0 (*I did not experience this change as a result of my crisis*) to 5 (*I experienced this to a very great degree as a result of my crisis*). The possible total scores can range from 0 to 105 (Taku et al., 2008).

The PTGI has demonstrated sound psychometric properties. Tedeschi and Calhoun (1996) reported a good internal consistency of $\alpha = .90$, with the emerging factors also showing substantial internal consistency (Tedeschi & Calhoun, 1996). The test-retest reliability of $r = 0.71$ was acceptable. The whole scale as well as the five subscales, has exhibited high levels of internal consistency (Taku et al., 2008). In a recent study investigating the dimensionality

of the PTGI, the results suggested good construct validity of the PTGI's factor structure and provided strong support for the PTGI as a multidimensional measurement instrument (Taku et al, 2008). The use of the five separate factors captured by the subscales to meaningfully interpret respondents' perceptions of PTG has been verified (Linley, Andrews & Joseph, 2007; Taku et al, 2008). The subscales of the PTGI are highly inter-correlated, suggesting that positive growth is identified similarly across the five domains of PTG (Stanton et al., 2006). In the initial testing of the measure, Tedeschi and Calhoun (1996) also noted that women were more likely to perceive benefit than men, and also that individuals who had experienced more severe trauma were more likely to report higher PTG.

3.2.2 Impact of Events Scale-Revised:

Participants were asked to briefly describe the type of traumatic event they had experienced and provide the date it happened, if possible. To assess whether respondents had experienced the reported event as traumatic, the Impact of Events Scale-Revised (IES-R), developed by Weiss and Marmar (1997), was used. The IES-R is a 21-item self-report measure designed to assess self-reported subjective distress for any specific life event (Hutchings & Devilly, 2005). High internal consistency of the IES-R, with sufficient evidence of validity has been reported (Hutchings & Devilly, 2005). A moderate score on the IES-R is considered to be 33 and above, with the possibility of PTSD as a diagnosis increasing as the IES-R score increases (Creamer, Bell & Fallia, 2003).

3.2.3 Depression Anxiety Stress Scales:

To assess levels of depression, anxiety and stress that may be associated with the experience of trauma or concurrent, the Depression Anxiety Stress Scales (DASS) was included. The

DASS is a 42-item self-report scale designed to measure the negative emotional states of depression, anxiety and stress (Lovibond, 2007). Each of the three DASS subscales contains 14 items. Subjects provide a score from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much, or most of the time*).

The DASS has demonstrated high internal consistency and meaningful discriminations in a range of settings (Lovibond, 2007). All three DASS subscales and the total scale have shown adequate reliability, and studies have reported Cronbach's alpha of .90 for anxiety, .95 for depression, .93 for stress and .97 for the total scale (Crawford & Henry, 2003).

The core development of the DASS was based on non-clinical samples and it is suitable for use with the general population (Lovibond, 2007). The severity rating index of the DASS is reported in Devilly (2005). Moderate scores on the depression subscale range from 14 to 20, with severe scores of 21 and above. Moderate scores on the anxiety subscale range from 10 to 14, with severe scores from 15 and above. Moderate scores on the stress subscale range from 19 to 25, with severe scores from 26 and above (Devilly, 2005).

3.2.4 Multidimensional Scale of Perceived Social Support:

Developed by Zimet, Dahlem, Zimet and Farley in 1988, the Multidimensional Scale of Perceived Social Support (MSPSS) is a measure of subjectively assessed social support, and the source of support, in a succinct format. It is a 12-item self-report scale where subjects rate items from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Items on the scale divide into three factor groups relating to the source of social support: namely family, friends and significant other (Zimet et al., 1988). A sum of the three scales yields a Global satisfaction with perceived social support score. It has shown adequate construct validity and the three-

factor structure was supported by confirmatory factor analysis (Clara, Cox, Enns, Murray & Torgrud, 2003). In initial testing, the MSPSS showed good internal consistency and test-retest reliability, and strong factorial validity of the subscales (Zimet et al., 1988).

3.3 PROCEDURE

3.3.1 Data Collection

Data collection was divided into two categories:

3.3.1.1 **HARD COPY QUESTIONNAIRES**:

Copies of the questionnaires were printed and collated into packs, 130 in total. These questionnaire packs were placed in sealed envelopes with a self-addressed envelope and handed out to volunteers through community organisations.

3.3.1.2 **TRAUMA SURVEY:**

An online survey was professionally developed and hosted online. This followed the same format as the hard copy questionnaires and included the subject information sheet, demographic information sheet and questionnaires. The web address was www.traumasurvey.co.za. This online survey allowed subjects to access and to complete the questionnaires online, and collated data and sent it back to the researcher in Excel format. The website was hosted on a local site from October 2007 to August 2008.

3.3.1.3 **PILOT STUDY:**

A pilot study was conducted with the Posttraumatic Growth Inventory. A survey was created on the site SurveyMonkey.com and the link emailed to 15 members of the Masters in Research Psychology class of 2007 at the University of Witwatersrand. Of the 15 email

requests sent out on Sunday 24th July 2007, seven responses were received by Sunday 1st July 2007. Nearly half the class had completed the survey online, all of them women. Respondents' email details were not recorded and the results were not analysed. It was simply a test of the internet-based PTGI and indicated the ease of use of the online survey.

A three-tiered approach was employed to reach potential subjects:

3.3.1.4 **SNOWBALL EMAIL REQUESTS:**

Three sets of email requests were sent via the Web to private email addresses, obtained from personal and organisational lists. This snowball sampling method involved sending the request to contacts and asking them to complete the survey if willing, and /or send it on to the addresses in their contact list. This email request contained a hyperlink for easy access to the survey.

3.3.1.5 **DISTRIBUTION:**

Several service providers within the community and members of community organisations handed out flyers and distributed questionnaire packs to volunteers. A number of volunteers assisted in distributing the email to the first round of email addresses. The website developer also posted information about the website on their home page.

3.3.1.6 **MAIL SHOTS:**

Twelve hundred flyers were printed and handed out to potential subjects within the local community. Flyers were distributed to parents at two local private schools, Holy Rosary School in Edenvale, and St Catherine's School in Germiston. Holy Rosary School also placed a notice in the school's weekly newsletter to parents regarding the study and provided the website address. One hundred flyers were handed out at a golf day raising

funds for a local nursery school, Pathways Pre-Primary Academy. Flyers were also posted at local running clubs, tennis clubs and churches asking members who had experienced trauma to voluntarily complete the online survey. The local pharmacy and local general practitioner's office also gave permission to leave flyers on their counter. Five hundred flyers were posted into post boxes in three suburbs, Dowerglen, Dunvegan and Edenvale, in Johannesburg. The email requests to volunteers, flyers and newsletter inserts are reproduced in the Appendices.

3.3.2 Surveys and Questionnaires

All volunteers were asked to read the Study Information sheet. This explained the nature of the study, assured them of the voluntary basis of the study and of full confidentiality, and gave an indication of how their input would be used. Completion of the questionnaires was taken as consent for their participation in the study and this was made clear to the volunteers. No names were required for completion of either the online survey or the hard copy questionnaires.

Volunteers were asked to complete a set of four self-report questionnaires and a demographic information sheet. Only basic demographic information was required: age, gender and the specific type of the traumatic event they had experienced, as well as the date of this event (where possible). Participants were then grouped according to the type of traumatic event they reported as well as period of time since the experience had occurred.

The questionnaires appeared as follows, and are reproduced in the Appendices:

1. Demographic information sheet ;
2. The Posttraumatic Growth Inventory/PTGI;

3. The Impact of Events Scale-Revised/ IES-R;
4. The Depression Anxiety Stress Scales/ DASS;
5. The Multidimensional Scale of Perceived Social Support/MSPSS;
6. A resource sheet.

Each set of hard copy questionnaires received a specific identifying number that appeared on all pages of the questionnaires and forms, a code that ranged from HC 001 to HC 130. This was the only form of identification for the participants. Completed questionnaire packages were posted or delivered to the researcher. Each online survey was identified by the date it was completed and a self-generated identifying number. Each competed online survey was sent to the researcher in Excel format and was not identified by name or email address of the subject.

As this constituted a potentially vulnerable population, the package included a debriefing sheet that provided the contact details of the researcher and her supervisor, as well as clinics for counselling and psychological help, in the event that the completing of the questionnaires triggered emotional distress. Ethics clearance was granted by an external ethics committee of the University of Witwatersrand.

3.4 RESEARCH DESIGN

This study employed a non-experimental, correlational design to examine whether PTG (the dependent variable) could be predicted by the type of traumatic event and perceived threat and as a function of the age and gender of respondents. Subjective distress reported after the event and time since the traumatic event were used as covariates. A secondary aim was to

explore whether perceived social support was a robust moderator of the development of PTG as a function of the type of event. Depression, anxiety and stress were also explored. Within the post-hoc analyses, the interrelationships between the five domains of PTG as proposed by Tedeschi and Calhoun (1996) were examined.

3.5 POWER ANALYSIS

A power analysis was done in order to determine the number of volunteers required for the study. A minimum sample of 60 participants was required to have sufficient power to detect moderate effect sizes. The aim was to collect 60 fully completed sets of questionnaires. A total of 142 completed surveys were received by the researcher. Along with the two participants who identified themselves as younger than 18 years of age, three other respondents filled in nil results and one did not provide sufficient data for any of the four measures. These respondents were eliminated from the final data set. Of the 135 completed surveys used for data analysis purposes, 39 were hard copy questionnaires and 96 were submitted online via the trauma survey website. Previous research has shown that responses obtained via different research methods, in particular paper and online formats can be pooled without bias and it was deemed suitable to combine the responses from the hard copy questionnaires and the online surveys (Price, Naus, Sanderson, Giovella & Watters, 2005).

3.6 DATA CLEANING

3.6.1 Time since Trauma

The data were examined in order to ascertain if any individuals had reported experience of a trauma in the two months prior to their completion of the trauma survey. It was assumed that

these individuals would be more likely to be suffering from post-traumatic stress symptoms, and also presented the possibility that for these individuals, sufficient time had not yet elapsed for PTG to stabilise. The period of greatest change within reported PTG has been identified as between two weeks to two months post-trauma, with reported levels of PTG remaining fairly consistent from two months to over one year after the traumatic event (Frazier et al., 2001). However, there were no exclusions on account of time. Of the 135 completed questionnaires, the time period since the traumatic events ranged from two months to 25 years post-trauma.

3.6.2 Age

With regard to age criteria, two respondents were omitted from the study as they were younger than 18 years of age. Both were 15-year-old girls who completed online surveys. One of these participants reported having experienced an abduction and sexual abuse at the hands of her kidnapper, but had managed to escape from the house where she had been held captive. The other young girl reported an experience of rape.

3.6.3 Lack of Information

Three online trauma surveys were omitted for lack of information as zero scores were submitted for each question. Another participant, a 34-year-old woman living in Johannesburg, submitted a partially completed questionnaire. Although educated and able to read and write, she found the questions too complicated and was unable to provide answers for 90% of the questions in the questionnaires. Once the data were examined and questionnaires were deemed to fit the parameters of the study, statistical analyses were conducted on the data submitted by 135 participants.

4. Results

"Against a backdrop of trauma, growth is not only unexpected and thus inherently interesting, but speaks to the multifaceted, inventive course of human coping and adaptation."

(Janoff-Bulman, 2006, p.81)

4.1 PRELIMINARY ANALYSIS:

4.1.1 Impact of Event scores

Volunteers were asked to complete the questionnaires with regard to their experience of a specific traumatic event. Data collected on the IES-R were examined to ensure that subjects reported moderate severity, and above, on the IES-R. A basic condition for the perception of PTG is the individual's experience of a "highly stressful or traumatic" life event. Given a possible range of 0 to 88, a meaningful score on the IES-R is considered to be 24 and above. Scores of 33 and over are representative of significant post-traumatic stress with PTSD a clinical concern (Creamer et al., 2003). Furthermore, scores of 37 and above suggest high levels of traumatic stress and a possible diagnosis of PTSD (Creamer et al., 2003).

Mean scores for the IES-R in this sample surpassed the critical level of 24 (M = 50.10; SD = 18.94, n = 135). This mean score is representative of high levels of post traumatic stress and PTSD as a clinical concern. Individuals in this sample had experienced significant post-traumatic stress symptoms and emotional distress associated with the traumatic event.

4.1.2 Depression, Anxiety and Stress

As the South African context has been described as highly stressful, the total and subscale scores obtained for the Depression, Anxiety and Stress Scale were carefully examined. Individuals overwhelmed by many other life stresses and challenges concurrent with the trauma, or who have experienced multiple traumas, may not be able to realise the benefits of the traumatic event reported. This "pile-up" of losses may in turn have an impact on PTG – it may render the individual burdened and unable to perceive the positive consequences of the traumatic experience or it may enhance PTG through repeated experience and awareness of personal strength and growth (Tedeschi & Calhoun, 2007).

Mean scores on the Depression, Anxiety and Stress subscales for this sample represented moderate ratings. The severity-rating index indicates that moderate scores range from 14 to 20 for the Depression subscale, from 10 to 14 for the Anxiety subscale, and from 19 to 25 for the Stress subscale (Devilly, 2005). Whether these feelings of depression, anxiety and stress are related to the context or to the traumatic event, are unclear. Mean scores for the DASS subscales were used in post-hoc analyses in order to further explore the relationship of PTG to levels of depression, anxiety and stress. These scores are tabulated in Table 1, along with descriptive statistics for all variables of interest.

4.2 MAIN ANALYSIS

To explore the research questions posed by the study, the data were examined, and correlational and multivariate analyses were carried out on the final data set (N = 135).

TABLE 1

Descriptive statistics for dependent and independent study variables

Variable	*n*	*M*	*SD*
Age	135	39.49	11.62
PTG	135	58.85	25.97
- Relating to others (RO)	135	20.45	9.50
- New possibilities (NP)	135	11.16	6.65
- Personal strength (PS)	135	12.09	4.85
- Spiritual change (SC)	135	4.97	3.61
- Appreciation of life (AOL)	135	6.93	3.68
- Male	29	51.93	22.30
- Female	106	60.74	24.17
Perceived Threat	134	2.34	0.82
IES-R	135	50.10	18.94
DASS total	135	46.07	33.52
- Depression	134	14.35	12.71
- Anxiety	134	12.20	11.00
- Stress	134	19.86	12.56
Perceived social support (PSS)	135	68.19	17.57
- from Friend	134	22.42	5.65
- from Family	134	22.20	6.49
- from Significant other	134	24.07	6.05

4.2.1 PTG

The majority of the sample perceived positive psychological growth associated with their experience of trauma (M = 58.85; SD = 25.97; N = 135). The mean PTGI score of this sample can be classified as a moderate score, falling into the range from 58 to 70. High scores are rated from 80 and above on the PTGI (Tedeschi & Calhoun, 2007). Of the sample, 24%

reported a low PTG score (40 and below), 53% reported moderate scores (41 to 79), and 23% reported high scores (80 to 101). Moderate PTG scores reported by this sample are higher than the mean PTG scores yielded by a previous study of participants affected by crime (M = 40; Peltzer, 2000 in Tedeschi & Calhoun, 2004) but substantially lower than that for bereaved parents (Mothers M = 83.47, fathers M = 79.92, Polatinsky & Esprey, 2000).

4.2.2 PTG and Age

The participants ranged in age from 18 to 79 years, and the mean age of the sample was 39.49 years. On average, women in the sample were slightly older (M = 40.46 years, SD = 10.67, n = 106). The average age for male respondents was 36.67 years (SD = 14.43, n = 29). PTG did not vary as a function of age (F (1, 134) = .02, p = .89), nor was age correlated to any other variables of interest in the study.

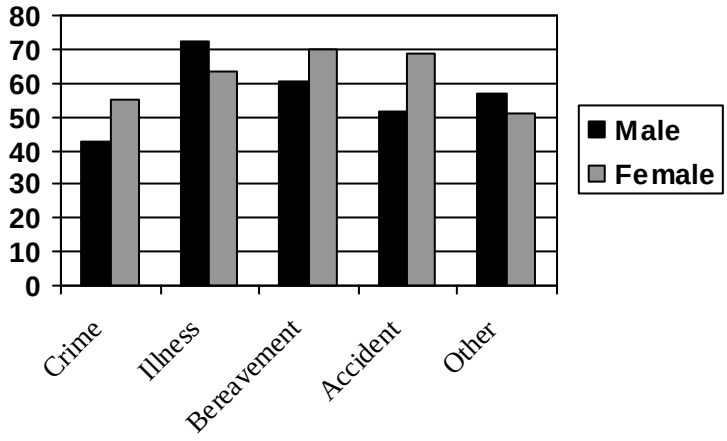
4.2.3 PTG and Gender differences

An adequate number of completed questionnaires from men and women were necessary to allow a comparison of PTG across gender. Twenty-nine completed surveys were submitted by male respondents, 21% of the sample. The number of surveys submitted by female respondents was more than three times those submitted by men and represented 79% of the sample (n = 106). Despite the imbalance, gender patterns in this sample were examined but there was no evidence for gender differences. This is possibly due to the insufficient number of surveys contributed by male respondents and may reflect a lack of power as the result was approaching significance (F (1, 134) = 3.13, p = 0.08). Women within the sample did, however, report relatively higher mean PTG scores (M = 60.74, n = 66) than men (M = 51.93, n = 29).

In all categories, female participants outnumbered male participants. For example, only three male volunteers reported on bereavement compared to 24 female volunteers. In terms of event types, women recorded higher mean PTG for crime, bereavement and accident or injury, but male respondents recorded higher mean PTG scores for chronic illness and for other events, such as attempted suicide and divorce. Sample sizes, however, were small in several of these groups. The trend for women to report higher PTG was not supported in this sample, possibly due to the differences across event types. Mean PTG scores by gender and type of events are presented diagrammatically in Figure 2.

FIGURE 2

Mean PTG scores by gender and type of event



4.2.4 PTG and Subjective distress after the trauma

A significant level of subjective distress associated with the traumatic event is assumed to underpin the individual's cognitive and emotional engagement with the trauma, as well as

necessary to initiate their cognitive processing and restructuring of the assumptive world – all critical processes in the individual's perception of PTG.

Participants who appraised the traumatic event as highly distressing also experienced the greatest amount of growth. Using Pearson's *r*, a significant positive correlation was found between PTG scores and IES-R scores (r = 0.29; p < .001, N = 135). This confirmed the hypothesis that the impact of the event would be related to PTG, and also replicated evidence from previous studies.

4.2.5 PTG and Perceived threat

The significant level of psychological distress precipitated by the traumatic event includes the perceived threat posed to the individual's life by the event. Both increased subjective and objective ratings of severity of the trauma have been linked to greater PTG. It would follow that the greater the severity of threat experienced with regard to the trauma, the higher the levels of PTG that would be reported. However, there was no significant correlation between the perceived threat attributed to the event and PTG scores (r = .13; p = .13).

An examination of the mean scores reported for levels of threat indicated that slightly more than half of the respondents (n = 75) had reported feeling a severe threat to their health, safety and life, and had reported a higher than average PTG score (M = 61.43; SD = 23.39). Mean scores on the PTGI increased to a small degree with the level of threat, but there was no significant statistical relationship between these two variables. Mean PTG scores according to perceived threat are presented in Table 2.

TABLE 2

Mean PTG scores according to level of perceived threat (n=134)

Level of threat	*n*	*Sample %*	*M (PTG)*	*SD*
Mild (1)	30	22.39	54.23	23.01
Moderate (2)	29	21.64	55.76	25.73
Severe (3)	75	55.97	61.43	23.43

Across event types, the level of perceived threat and PTG varied to a great degree. Again, there was no evidence of statistical significance. Mean scores according to perceived threat and type of event are tabulated in Table 3. It is interesting to note that for the sub-groups who reported crime and bereavement, as the level of perceived threat increased, so did the perception of PTG. However, this did not hold true for the other sub-groups who experienced illness, accidents or other traumas.

The majority of participants who reported traumatic bereavement experienced a mild to moderate degree of threat to their own lives and well-being (n = 20; 76%). Of the crime sub-group, in contrast, more than half the participants had perceived a high level of threat (n = 42; 63%). For chronic illness, two-thirds of the participants reported severe threat (n = 16), and 83% of participants involved in accidents reported elevated perceptions of threat.

TABLE 3

Mean PTG scores according to level of perceived threat and type of event (n=134)

Type of event	*Threat*	*n*	*M (PTG)*	*SD*
Perpetrated crime	1	8	44.50	23.90
	2	16	45.31	27.06
	3	42	56.12	24.26
Chronic illness	1	5	60.20	19.41
	2	3	53.67	29.70
	3	16	69.00	19.81
Traumatic bereavement	1	11	60.00	27.18
	2	9	72.44	11.07
	3	6	76.67	13.95
Accident or injury	1	1	63.00	.
	2	1	79.00	.
	3	10	61.50	25.63
Other events	1	5	49.40	15.50
	3	1	71.00	.

4.2.6 PTG and Feelings of depression, anxiety and stress

Central to the concept of PTG is the co-existence of positive personal growth and significant emotional distress. Individuals in this sample, who reported high levels of PTG, also reported feeling the greatest amount of depression, anxiety and stress. Pearson's correlation coefficients were calculated for PTG and depression, anxiety and stress scores.

A significant positive correlation was established for PTG and depression, ($r = 0.23$; $p < 0.01$, $n = 134$), for PTG and anxiety ($r = 0.22$; $p < 0.01$; $n = 134$), as well as for PTG and stress ($r = 0.19$; $p < 0.05$; $n = 134$). These results support the claim that individuals report both growth

and psychological distress in the aftermath of trauma, and that the perception of PTG does not counteract the emotional trauma of the experience. In order to examine the interaction of depression, anxiety and stress and time since the traumatic event, and the interaction effects with PTG, post-hoc analyses were conducted.

4.2.7 PTG and Perceived social support

Several studies have demonstrated empirical support for a positive association between perceived social support and PTG (Kinsinger et al., 2006; Mosher et al., 2006; Weiss, 2004), although the role of social support in the process of PTG is complex. Data were collected for three sources of perceived social support – social support from family, from friends and from significant others. The subscale scores were used for analysis purposes, given that particular forms of perceived social support may be more important to the individual in the wake of trauma (Weiss, 2004).

The relationship between PTG and perceived social support was explored by looking at the correlation coefficients. The statistical analyses supported the importance of the sources of support in relation to PTG. Only perceived social support from friends was significantly correlated with PTG ($r = 0.22$, $p < 0.05$). However, the Relating to others factor of PTG was significantly correlated to perceived social support from family and friends, but not to perceived social support from significant others. These results are tabulated in Table 4 and the descriptive statistics presented in Table 1.

TABLE 4

Correlations between Relating to Others (RO) and sources of perceived social support (PSS)

Variable	*n*	*RO (r)*	*p*
PSS from Family	134	0.20	p < .05 *
PSS from Friend	134	0.28	p < .01 **
PSS from Significant other	134	0.11	p = 0. 21

Note: * significant at p < .05 level

** Significant at p < .01 level

Results from the ANOVA indicated that PTG varied according to perceived social support. The source of social support also emerged as important. PTG differed significantly as a function of perceived social support from friends and social support from significant others. Perceived social support from family members did not display any significant relationships to PTG, suggesting that social support from family members may be affected by other variables. Statistical results for the model and main effects are tabulated in Table 5. Family members may be affected through vicarious exposure to the traumatic event, and experience their own degree of traumatic stress and loss. This may have impacted qualitatively on the level of social support they were able to offer, or to the level of support distributed through the family network. Individuals may also have tried to shield other family members from their distress, thereby hindering the intimacy and sharing of interpersonal support.

TABLE 5

Univariate ANOVAs for PTG by perceived social support (PSS) (n=134)

Source	*df*	*F*	*Pr > F*
Overall	3	4.09	0.008 **
PSS from Family	1	1.96	0.16
PSS from Friend	1	5.03	0.03*
PSS from Significant other	1	5.41	0.02 *

Note: * significant at p < .05 level

** Significant at p < .01 level

4.2.8 PTG and Type of traumatic event:

Traumatic events reported by participants were classified into five basic categories of event. Types of events as percentages of the total sample are presented in Figure 3. These five categories included:

1. Perpetrated Crime (*n* = 66)

   With regard to violent crime, these externalised events typically involved human agency and the use of firearms and/or knives by the perpetrators. Events included armed robbery and hijacking (*n* = 54), mugging and smash-and-grab attacks (*n* = 3), rape and sexual assault (*n* = 6), physical assault (*n* = 3), and burglary (*n* = 1).

2. Chronic Illness (*n* = 24)

   Events in this category included cancer (*n* = 9) and other life threatening illnesses (*n* = 15).

3. Traumatic Bereavement (*n* = 27)

Participants in this group had experienced the traumatic loss of a family member or friend. Individuals reported the death of a spouse (*n* = 5), the death of a parent or a sibling (*n* = 14), the loss of a child (*n* = 4), and the death of a close family member or friend (*n* = 4).

4. Accident or injury (*n* = 12)

With regard to accidents, participants reported severe car accidents, often involving serious physical injuries for the survivor and the death of others (*n* = 10), as well as accidents in which their child was severely injured (*n* = 2).

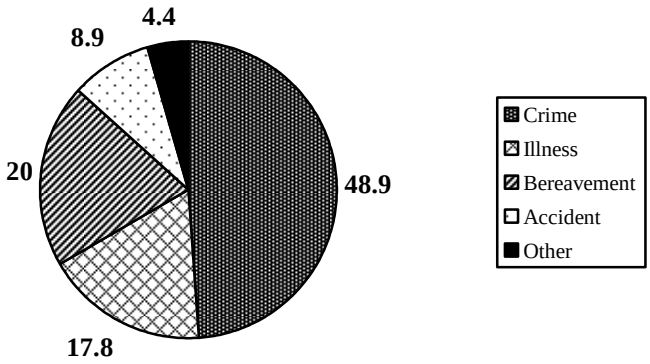
5. Other Events (*n* = 6)

These traumatic events reported by individuals did not meet the criteria above, but were experienced by the individuals as significantly distressing and submitted for the survey. This included divorce (*n* = 2), disaster (*n* = 2) and attempted suicide (*n* = 2).

Traumatic events reported by the sample corresponded to events cited as the most prevalent causes of mortality in South Africa, and the percentages conform to the pattern of occurrence in the general population. The South African sample, albeit not a student-based sample, reported a high incidence of perpetrated crime – as was anticipated by the review of traumatic events in the South African context.

FIGURE 3

Types of traumatic events as a percentage of the sample



A one-way ANOVA examining the mean differences of PTG across the type of event was conducted. This yielded significant results (F (1,135) = 4.75, $p < 0.05$), and indicated that the type of traumatic event experienced by individuals accounted for 3% of the variance in the PTGI score. Participants who had experienced bereavement reported the highest PTG scores (M = 69.11; SD = 20.86, n = 27), whilst those who had experienced perpetrated crime had the lowest mean scores (M = 52.09; SD = 25.11; n = 66). Nonetheless, individuals who had experienced crime reported higher mean PTG scores than the group exposed to criminal victimisation reported by Peltzer (2000) (M = 40, as cited in Tedeschi & Calhoun, 2004).

Mean PTGI scores according to event type are displayed in Table 6 and in Figure 4. Sample sizes in certain of the sub-groups were very small and results should be interpreted cautiously.

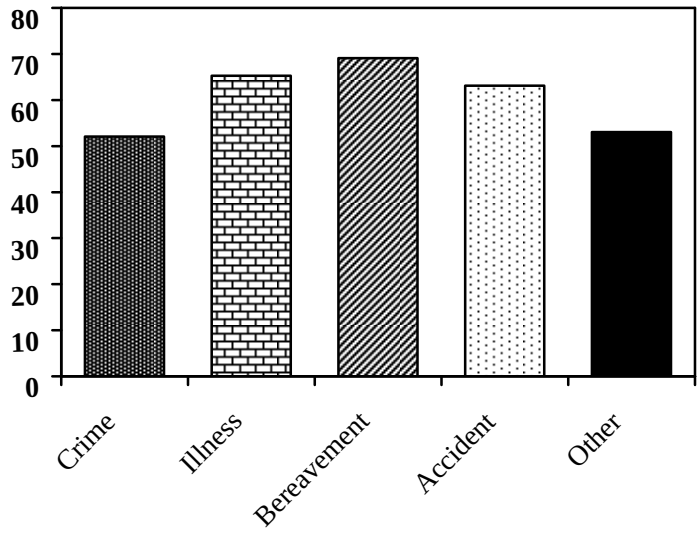
TABLE 6

Mean PTGI scores across type of traumatic event

Type of Event	*n*	*Mean PTG*	*SD*
Crime	66	52.09	25.11
Chronic Illness	24	65.25	20.76
Bereavement	27	69.11	20.86
Accident or Injury	12	63.08	23.72
Other	6	53.00	16.43

FIGURE 4

Mean PTG scores according to type of event



Further analyses assessed the mean differences of each factor of PTG across type of event. A MANOVA was conducted for the five PTG factors as the dependent variables and type of event as the independent variable. As the most commonly used test of the significance of the linear combination of dependent variables in terms of independent variables, Wilks' Lambda was selected (Devlin, 2006). The value, pertaining to the combination of factors as modified

by the type of event, was not significant (0.81, F (20, 134) = 1.35, p = .14), suggesting there was no significant overall effect.

Univariate ANOVAs yielded significant results for three of the factors of PTG: Relating to others (F (4, 135) = 3.23, $p < .05$); New possibilities (F (4, 135) = 2.39, $p < .05$); and Spiritual change (F (4, 135) = 2.71, $p < .05$). Results for all five factors are presented in Table 7. Variance in these factors was thus explained to a small degree by the type of traumatic event reported by individuals.

TABLE 7

Univariate ANOVAs for Factors of PTG by type of event (n=135).

Domain of PTG	*df*	*F*	*Pr > F*
Relating to others	4	3.23	p = 0.01*
New possibilities	4	2.39	p = 0.05*
Personal strength	4	1.97	p = 0.10
Spiritual change	4	2.71	p = 0.03*
Appreciation of life	4	1.86	p = 0.12

Note: * significant at p < 0.05 level

The possibility of different routes to growth and the complexity of patterns of growth is well-recognised (Calhoun & Tedeschi, 2006). The type of traumatic event as reported by the individual - be it perpetrated crime, traumatic bereavement, chronic illness, accident or other, may have an impact on the overall PTG expressed by the individual. The results suggest that the pattern of growth, as measured by three of the factors of PTG, may differ according to type of event, although the type of event was predictive of PTG to a small degree only. There was no significant effect for type of event as predictive of Personal strength and Appreciation

of life. The variance in these factors of PTG was not significantly explained by the characteristics of the event.

4.2.9 PTG and Time since the traumatic event

Time since the trauma has been repeatedly identified as an important factor in the study of PTG, particularly with regard to the process by which PTG develops and the timing of assessment. There is little evidence for a consistent relationship between time since the traumatic event and PTG. In this sample, time since the traumatic event was divided into eight time periods. The data for participants were grouped accordingly:

1. 2 – 6 months (n = 4)
2. 6 months – 1 year (n = 28)
3. 1 – 2 years (n = 2)
4. 2 – 5 years (n = 33)
5. 5 – 10 years (n = 29)
6. 10 – 15 years (n = 14)
7. 15 – 20 years (n = 6)
8. 20 years + (n = 1)

Perceived benefits have been identified as stable up to three years post-trauma (McMillen et al., 1997), and up to eight years after heart attack (Affleck et al., 1987). The time periods for events reported in this study far exceeded these boundaries.

A one-way ANOVA was conducted to examine the differences in means of PTG across the time periods since the traumatic event. The result was significant (F (7,135) = 2.08, p = .05), suggesting that PTG varied according to time since the event. With further inspection of

means, the possibility of additional moderating factors was raised and post-hoc analyses were carried out to further unpick these effects. In particular, the interaction of time since the traumatic event and depression, anxiety and stress as reported by the participants, was analysed. It was also noted that sample sizes in several of the cells were very small.

4.3 POST HOC ANALYSES

4.3.1 PTG, Depression, Anxiety, Stress and Time since the Event

The positive association between PTG and feelings of depression, anxiety and stress prompted further examination of the moderating effects of the variables of interest. In particular, time since the trauma was isolated as a potential moderating variable. To simplify analysis of this variable and to improve power, the initial eight time periods where collapsed to ensure sufficient numbers in cells. Five new periods of time since the trauma emerged:

1. 0 – 1 year (n=31)
2. 1 – 2 years (n=20)
3. 2 – 5 years (n=33)
4. 5 – 10 years (n=29)
5. 10 years plus (n=21)

Using these new time periods to further examine the relationship of depression, anxiety and stress to time since the traumatic event, a two-way ANOVA was conducted to evaluate each of these interactions. Results indicated that overall the model was significant ($F = 4.97$; $p < .01$). The interaction between depression and time since trauma was significant at the $p < .05$ level (F (3, 130) = 5.96; p = .02) but the univariate effects of depression (F (3, 130) = 1.15; p = .28) and time since trauma (F (3, 130) = 1.24; p = .27) were not significant.

Table 8

Two-way ANOVAs for PTG by negative emotional states and time since trauma (n= 135)

Item	*df*	*F*	*Pr > F*
Depression by time since trauma	3	4.97	p = 0.003**
Anxiety by time since trauma	3	5.22	p = 0.002 **
Stress by time since trauma	3	8.31	p = 0.0001 ***

Note: ** Significant at p < .01 level

** Significant at p < .01 level

*** Significant at p < .001 level

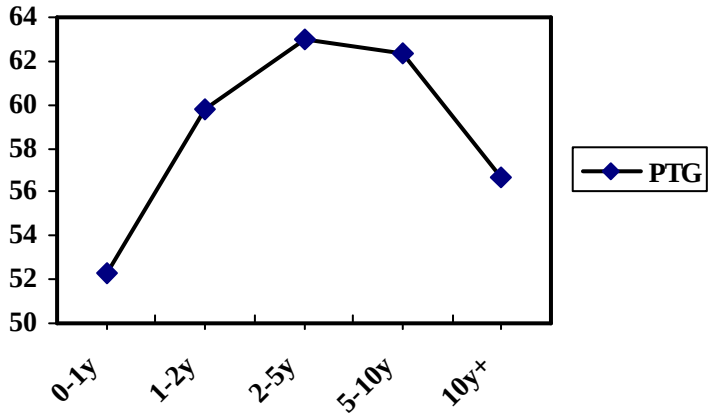
Accordingly, significant results were obtained for a MANOVA performed on anxiety and time since the traumatic event, and for stress and time since the traumatic event. These are also presented in Table 8. Univariate effects for anxiety (*F* (3, 130) -=1.55; p = .215) and time since trauma (*F* (3, 130) = 1.34; p = .25) were not significant, although the interaction effect was significant at the p < .01 level (*F* (3, 130) = 7.3; p = .008). Univariate effects for stress (*F* (3, 130) = 7.40; p = .0074) and time since trauma (*F* (3, 130) = 7.87; p = .006) were significant at the p < .001 level. With regard to the interaction effect between stress and time since the traumatic event, this too was significant (*F* (3,130) = 17.23, p < .0001).

Examination of the means suggested that reports of PTG across the five time periods have assumed a curvilinear pattern. Mean scores for PTG, depression, anxiety and stress are presented in Table 9. PTG is shown to be stable from the Time period 2 (1 to 2 years) to Time period 4 since the traumatic event (5 to 10 years). PTG is highest up to Time period 4, and then drops off dramatically from Time period 5 since traumatic event (10 years+). This pattern, as can be seen in Figure 5 below, has suggested that the individual may be initially incapacitated with the experience of trauma, and is unlikely to perceive high levels of PTG in

the first stage after the trauma. PTG may develop over the course of time and healing, as levels of PTG increased from 2 years to 10 years post-trauma. PTG also appeared to be stable for this period, and then decreased with time, possibly as the impact of the event and its aftermath were assimilated into the individual's life.

FIGURE 5

Mean PTG scores according to time since the traumatic event (n=135)



The curvilinear pattern of PTG and its relation to psychosocial adjustment has been supported by results from previous studies (Lechner et al., 2006, Milam, 2006). In the current study, results indicated that the temporal pattern of growth cannot be represented by a positive linear relationship. From the mean scores, posttraumatic growth appeared to develop in strength over time, to reach a peak and then decline as time passed. This occurred in the context of emotional distress, in particular feelings of depression, anxiety and stress, and may have been influenced by other moderating factors.

TABLE 9

Mean scores for PTG, Depression, anxiety and stress across time periods (n = 134)

Date	*n*	*PTG*	*Depression*	*Anxiety*	*Stress*
0 – 1 y	31	52.28	14.23	11.87	21.65
1 – 2 y	20	59.80	12.95	11.40	19.15
2 – 5 y	33	62.97	14.15	12.21	20.00
5 – 10 y	29	62.31	15.34	12.97	19.21
10 y +	21	56.71	14.81	12.38	18.57

Evidence for the trajectories of depression, anxiety and stress in the examination of interaction effects did not show a similar pattern. Levels of depression, anxiety and stress were reported at moderate levels across the time periods. These feelings of depression, anxiety and stress cannot be linked to the reported traumatic event, given the limited information provided by individuals. When completing the DASS questionnaire, the instructions required participants to rate the statements as they had applied in the past week. Thus, feelings of depression, anxiety and stress may be artefacts of current stressful life situations, or related to the context within which the individuals are living and working, and unrelated to the traumatic event they had reported.

4.3.2 Growth Factors

The five subscales of the PTGI were further analysed for possible patterns of growth. These factors are highly inter-correlated, as presented in Table 10. A differential pattern of linear relationships emerged between the factors of growth and other variables of interest, pointing

to the complexity of the phenomenon of posttraumatic growth. Patterns of correlations between the factors of PTG and the impact of event scores, depression, anxiety and stress, are shown in Table 11.

TABLE 10

Inter-correlations (Pearson's r) for factors of PTG (n=135)

Domain of PTG	*RO*	*NP*	*PS*	*SC*	*AOL*
Relating to others (RO)	-	0.70 ***	0.60 ***	0.57 ***	0.65 ***
New Possibilities (NP)		-	0.62 ***	0.52 ***	0.87 ***
Personal Strength (PS)			-	0.48 ***	0.54 ***
Spiritual Change (SC)				-	0.52 ***
Appreciation of Life (AOL)					-

Note: *** Significant at p <.0001

Threat was positively correlated with Appreciation of life (r = 0.17, p < .05) suggesting that the individuals who perceived the greatest threat associated with their experience also showed evidence for greater Appreciation for Life, a prime factor of PTG. The impact of the event scores were positively correlated with all factors, except for Spiritual change. Feelings of depression, anxiety and stress were positively associated with Relating to others, New possibilities and Appreciation of life, but not related to Personal strength. The factor Personal strength evidenced a significant relationship with subjective distress recorded on the IES-R. Only feelings of depression and anxiety showed a positive relationship with Spiritual change. Furthermore, Relating to others demonstrated a moderate positive linear association with perceived social support from family (r = 0.21, p < .05) and perceived social support from friends (r = 0.29, p < .001). There was no association between the PTG factors and perceived social support from significant others.

TABLE 11

Significant correlations (Pearson's r) between variables and PTG factors

Variable	*n*	*RO*	*NP*	*PS*	*SC*	*AOL*
IES-R	135	0.24 **	0.31 ***	0.21 **	NS	0.25 **
Depression	134	0.22 **	0.24 **	NS	0.17 *	0.19 *
Anxiety	134	0.22 **	0.24 **	NS	0.18 *	0.24 **
Stress	134	0.20 *	0.21 *	NS	NS	0.18 *

Note: * significant at p < .05 level

** Significant at p < .01 level

*** Significant at p < .001 level

NS – Not significant, RO – Relating to others, NP – New possibilities, PS – Personal strength, SC – Spiritual change, AOL – Appreciation of life

A more detailed examination of the mean scores for the PTG factors according to type of event did not yield any specific pattern of findings. For each factor of PTG, a two-way analysis of variance was conducted to examine mean PTG factor differences as a function of Type of Traumatic event and Time since Traumatic Event, this being the second set of time periods used in the post-hoc analyses. The results suggested differential patterns of posttraumatic growth for the factors. A specific pattern of main effects and interaction effects for the domains of PTG by type of traumatic event and by time since the event emerged. Wilks' Lambda was again selected for an assessment of the multivariate analyses. The Wilks' Lambda value of 0.73 (F (20, 134) = 1.98, p < .01) indicated that overall, there was a significant interaction of dependant variables in terms of the factors of PTG. Mean scores for PTG and depression, anxiety and stress across time periods are presented in Table 11.

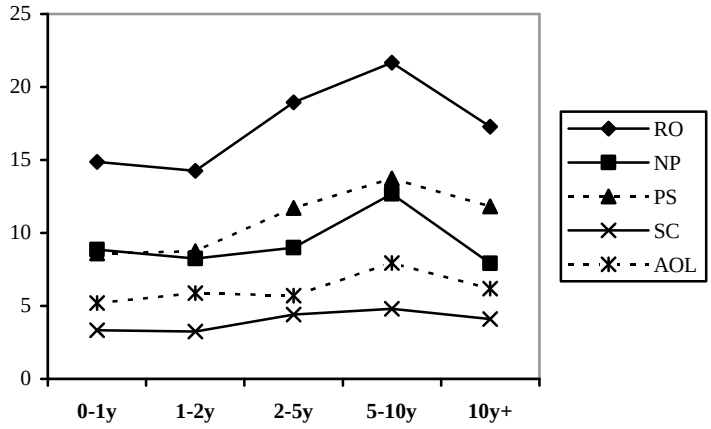
For Relating to Others, the analyses yielded a significant result (F (9, 134) = 2.20; $p < .05$) but only the main effects for Type of Event were significant (F (4,134) = 2.69; $p < .05$). For the factor of Personal Strength, the model yielded a significant coefficient (F (9, 134) = 2.44; $p < .01$) but only the type of event was significant (F (4, 134) = 3.26; $p < .01$). The factor Spiritual Change showed a significant interaction effect of the type of traumatic event by the time since the event (F (4, 134) = 1.98; $p < .05$), within the overall model (F (9, 134) = 1.98; $p < .05$).

Significant interaction effects for the type of traumatic event by the time since the event were recorded for the factors of New Possibilities (F (4, 134) = 2.73; $p < .05$) within the model (0.15; F (9, 134) = 2.52; $p < .01$). In addition, the Appreciation of Life factor of PTG yielded an overall result (F (9, 134) = 2.76; $p < .01$) with a significant main effect for the type of traumatic event (F (4, 134) = 4.11; $p < .01$) as well as for the interaction of type of event and time since the event (F (4, 134) = 3.82; $p < .01$).

For the group who had experienced violent, perpetrated crime, the mean PTG scores remained moderate for the time period from 0 to two years, and then increased across the time period from two to 10 years period. From 10 years, the scores decreased again. Plotting the mean scores suggested a differential pattern of increase and decrease of factor scores according to time since the event, and specific to this traumatic event. A specific trajectory of growth for each growth across time periods for the crime sub-group is illustrated in diagrammatic form in Figure 6.

FIGURE 6

Mean scores for PTG factors across time periods for perpetrated crime sub-group



Note: RO – Relating to others, NP – New possibilities, PS – Personal strength, SC – Spiritual change, AOL – Appreciation of life

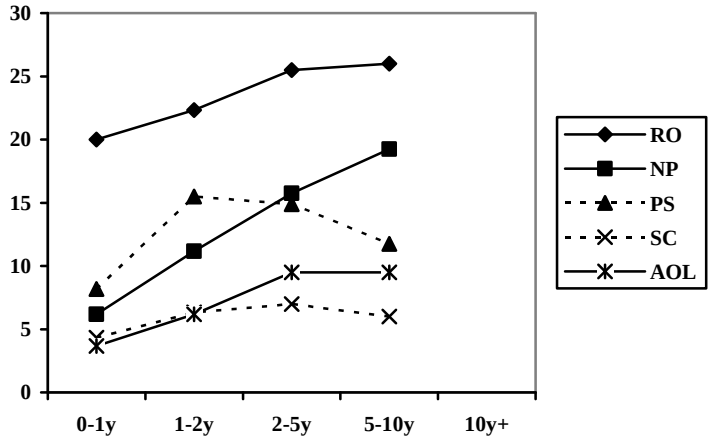
For this group, the specific factors of Relating to others, New possibilities and Appreciation of life showed slight evidence of the same pattern as growth remained relatively stable up to the two year period. Elevated scores were recorded for the two to ten year period after the event, before scores declined from 10 years on. However, for Personal strength and Spiritual change, the trajectory did not show the same rate of increase and remained more level. Whilst this is preliminary evidence only, it speaks to the possibility of different patterns of growth across different traumatic events and again highlighted the moderating effect of time since the trauma.

Specific patterns, however, did not emerge for the other types of events. This may have been the result of small cell sizes and missing values for some of the time periods. For the other traumatic events, the numbers of participants that reported each event were low. Therefore, growth patterns could not be plotted with accuracy for each PTG factor, every time span and

each type of traumatic event as can be seen in Figures 7 and 8. The other sub-groups of events also contained a wider variety in terms of the events, compared to the group who had experienced criminal victimisation. Therefore, the examination of the means did not allow for any precise statements as to the interaction of time since the traumatic event and the type of event. These preliminary findings may provide fruitful avenues for further study.

FIGURE 7

Mean scores for PTG factors across time periods for chronic illness sub-group (n=24)

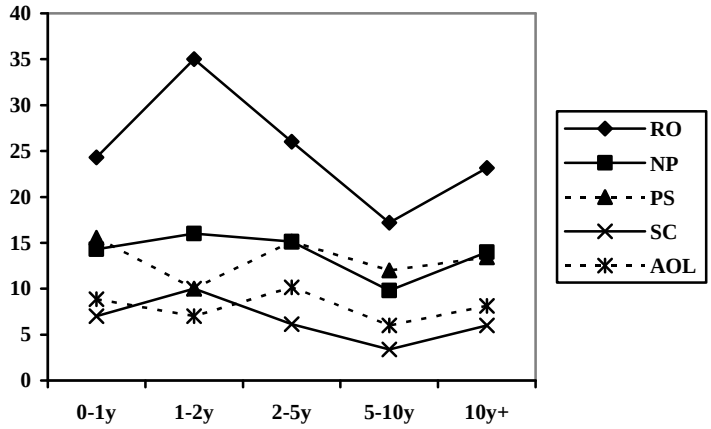


Note: RO – Relating to others, NP – New possibilities, PS – Personal strength, SC – Spiritual change, AOL – Appreciation of life

These results also suggested that the stability of growth patterns over time need to be investigated, and pointed to the qualitative differences in PTG according to time since the event and indicators of emotional distress. By assessing the factors of PTG as well as the overall score, studies may yield greater insight into the different patterns of growth, and may explain the lack of consensus regarding the variables affecting PTG across studies.

FIGURE 8

Mean scores for PTG factors across time periods for bereaved sub-group (n=27)



Note: RO – Relating to others, NP – New possibilities, PS – Personal strength, SC – Spiritual change, AOL – Appreciation of life

5. Discussion

"Growth involves internal changes – transformations within the person – rather than external changes in circumstance."

(Janoff-Bulman, 2006, p.82)

5.1 THE COMPLEXITY OF GROWTH POST-TRAUMA

This study, of a South African sample who reported a range of traumatic events, highlighted many of the current issues surrounding PTG as a measurable outcome of adversity. As a concept, PTG is not easily reduced to its elements or pared down to a one-dimensional construct. Rather, it is a highly subjective and multilayered perception of change on emotional, cognitive, behavioural and relational levels that is reported retrospectively by individuals. In this sample, perceptions of PTG were determined to be both complex and multi-layered and subject to the moderating influence of key factors.

5.1.1 Characteristics of the Subjective Experience

As a subjective experience of growth, PTG is open to the influence of individual characteristics. In particular, studies have examined the impact of age and gender on PTG, as well as the role played by personality attributes, coping abilities and religious beliefs. There was no evidence for gender differences in posttraumatic growth in this sample. Lack of power, due to the low number of male participants, most likely undermined the statistical power. The range of events under examination may have diluted the impact of gender

differences, although sample sizes were very small and this inference was drawn from these small clusters of responses. However, there was some degree of variation in PTG reported by men and women across event types. For example, it was observed that men reported higher posttraumatic growth in groups who reported chronic illness when compared to women. Facing their own illness and physical mortality may have prompted male participants to revaluate their lives to a greater degree, and thus encouraged them to perceive PTG. Female participants reported higher PTG in the groups who had experienced crime, bereavement and accidents, suggesting that the type of event may have an influence on the level of PTG reported in conjunction with gender and other factors, such as current indicators of well-being or distress, in moderating the individual's perception of growth.

Analyses yielded no significant findings with regard to age of participants, contrary to the recent evidence for a negative relationship between PTG and age (Helgeson et al., 2006; Lechner & Antoni, 2004; Stanton et al., 2006; Widows et al., 2005). Again, other factors, such as stage of life and developmental maturity of the different respondents, may play a greater role than age and these require further investigation as moderating variables in the process of PTG. Individual characteristics are believed to play an important role in the perception of PTG, and the lack of extensive data regarding the personality attributes and coping styles, beliefs and attitudes of participants in this sample may have undermined results. What is clear is PTG did not vary according to the gender and age of participants or show any linear relationship with PTG in this sample.

5.1.2 The Impact of the Event

Individuals reported significantly high levels of post-traumatic stress symptoms after the traumatic event. In line with findings yielded by other studies, individuals who reported the

greatest subjective distress also reported the highest PTG. The perception of growth has occurred in the wake of a traumatic event that caused significant psychological distress, an essential element of the processing underneath PTG. The emotional and psychological impact of the traumatic experience was related to greater perceptions of change in the aftermath of trauma. This suggested that participants who experienced greater distress associated with the trauma were more motivated to perceive growth as a result of their experience.

Approximately half the sample reported feeling severe threat to their lives as a result of their trauma. The most consistent predictor of post-trauma functioning and recovery has been the severity of the trauma, and the perception of growth is believed to depend to a large extent on the severity of trauma (Calhoun & Tedeschi, 2006; Zoellner et al., 2008). There was no evidence for a relationship between perceived threat and PTG in this sample. While not statistically significant, individuals who reported a higher level of threat reported a relatively higher extent of growth when compared to individuals who reported lower threat (mild or moderate). The subjective assessment of threat varied, relatively, according to the type of event. Individuals who had been involved in an accident perceived the greatest level of threat to their lives, followed by those who had been affected by violent crime or chronic illness. Understandably, bereaved individuals reported a lower level of perceived threat when compared to individuals in the other subgroups. Perceived threat is open to individual interpretation, although subjective assessments of risk have been shown to be highly correlated with PTG in previous research. The perceived threat reported by individuals showed a significant positive relationship with the PTG factor, Appreciation of life. Individuals who reported higher subjective assessments of threat also reported greater appreciation for life and the details of their daily lives in the aftermath of the trauma. There was no evidence for an association between perceived threat and the impact of the event.

These results underscore the importance of the subjective nature of the experience of trauma, particularly the impact of the event, the experience of emotional distress and of the appreciation for life and meaning derived out of the struggle with adversity.

5.1.3 Perceptions of Social support

Social support and the individual's perception of social support available to them in times of distress, have been identified as critical factors in the process of posttraumatic growth (Weiss, 2004; Westphal & Bonnano, 2007). Furthermore, specific sources of social support are regarded as more important in the process, particularly social support from partners and role models. In this sample, individuals who perceived positive social support from friends in their time of need also perceived greater posttraumatic growth, and rated higher on the Relating to others factor of PTG. Social support from these social networks also accounted for variance in reported PTG, along with social support from significant others. Again, the results suggest a complicated pattern of involvement of the factors. Social support from all three sources was not similarly related to PTG or the factors of growth.

Social support provided by friends appeared to hold the greatest significance for individuals, and was statistically supported as both a predictor of variance in PTG, and as related to PTG. The importance of friends who allow the individual to tell their story, who provide comfort and space for the individual's distress, as well as help on a practical level cannot be undervalued. It may be that family members and significant others (spouses or life partners) are too close to the individual's pain and suffering. Family members and spouses may have experienced vicarious traumatisation as a result of the participants' trauma, and this may have affected their responses to the individual's traumatic experience or hindered their ability to provide support. This in turn may have had an impact on the individuals' perception of

support from these social groups. Social support is clearly important in the process of growth, particularly with the emphasis on interpersonal relationships in the model and measurement of PTG. The role of social support in the process of PTG may be more complex than previously thought. Current research has suggested that personality factors may influence PTG via social support and religiosity (Wilson & Boden, 2008).

5.1.4 The Type of Traumatic Event as a Factor of Growth

Individuals in the sample experienced significant posttraumatic stress symptoms as a result of the traumatic events they reported. The majority perceived positive psychological growth as a result of their experience, although to a moderate degree only. Trauma was identified as the catalyst for personal growth as individuals perceived the positive changes to be the result of their experience of the trauma. This was true across all types of events, even though victims of crime appeared to endorse less growth.

Individuals were grouped according to the five basic traumatic events reported – these being crime, illness, bereavement, accident and other events. An Australian study of PTG reported by students after their experiences of trauma displayed a similar pattern of frequently occurring events, with the exception of violent crime. The mean PTG score in the Morris et al. study was also lower (M = 51.97; SD = 21.40; N = 219) in comparison to this sample (M = 51.97; SD = 21.40; N = 135).

Significant differences in posttraumatic growth were observed as a function of the type of traumatic event, and suggested that characteristics of the event type co-varied with perceptions of growth. This may have been due to the personal meaning ascribed to the events by individuals. Individuals who experienced more personally meaningful traumas, such as

bereavement and chronic illness, reported higher levels of posttraumatic growth than those who had been exposed to violent crime. This supported the premise of posttraumatic growth as a highly subjective experience of psychological change. Individuals exposed to violent crime found less meaning in the criminal acts perpetrated against them. Wortman (2004) identified several conditions that may impede growth, and these included acts of violence and harm perpetrated against the individual. In this sample, event characteristics may have affected PTG in the crime sub-group, such as the random nature of the criminal act, the violent and unpredictable actions of perpetrators and the use of weapons to threaten and coerce individuals to cooperate. Survivors may have felt less able to control their world and less able to protect themselves from re-occurrence, particularly within the context of high levels of crime.

In contrast, those respondents who faced traumatic events of a more personally meaningful nature, such as bereavement or chronic illness, may have felt more in control of their coping process, and thus better able to perceive growth as a result of their experience. Deriving meaning and growth from suffering is subject to individual variation, but the specific characteristics of each type of traumatic event appear to have an impact on PTG and the adjustment process.

In conjunction with moderate PTG scores, individuals in the sample showed elevated levels of post-traumatic stress symptoms and reported significant emotional distress after the event. These significantly high scores of subjective distress were positively associated with PTG, further supporting the premise that the greater the subjective impact of the event, the greater the perception of posttraumatic growth. Despite this positive relationship, there was no evidence for the significance of perceived threat. The level of threat attributed to the

traumatic event was not associated with PTG, as was expected. Mean PTG did appear to increase with greater perception of threat, but only relatively so. This may have been the result of within-group differences. The combination of the different types of events may have had an impact on the association between the variables, given that the unique characteristics of different events may have posed particular types of threat to the individual. For example, the different degree of threat posed by an armed robbery compared to the death of a spouse or child may have influenced the outcome of the results. Again, the individual experience of trauma is open to variability in terms of the event: duration and the degree of terror, helplessness and harm endured by the individual. While perceived severity of the trauma was not a significant factor, the characteristics of the traumatic event appeared to play a role in individuals' ability to perceive growth.

Furthermore, perceptions of PTG were examined in light of the factors of growth and the type of trauma. Three of the factors of PTG – Relating to others, New possibilities and Spiritual change – demonstrated variance as a function of the type of traumatic event. These factors may be more sensitive to the characteristics of the different types of traumas and the personal meaning ascribed to the events. A traumatic event marked by greater meaning and importance for the individual, may more likely to include enhanced relationships and intimacy with others, a renewed sense of purpose and possibility in life and a greater engagement with spiritual and existential questions about faith and meaning in life. The patterns of personal growth, symbolised by the factors, also showed subtle variations according to event type as well. It is conceivable that nature of the stressor may differentially affect the factors of posttraumatic growth, and further research is needed to determine if such diverse growth patterns exist. Indeed there may be many pathways to the posttraumatic growth (Calhoun & Tedeschi, 2004). The multidimensional nature of PTG is well established (Morris et al.,

2007; Zoellner et al., 2008). PTG by definition is a composite of the cluster of positive changes – part of the process that is subject to the moderating influence of socio-cultural, interpersonal and intrapersonal variables. The results have revealed that PTG may be influenced by the characteristics of the event, and PTG may vary as a function of the type of event. Moreover, this influence extends to all dimensions of the growth process.

5.1.5 The Importance of Time

Time since the traumatic event emerged as a critical variable in the understanding of perceived growth after trauma. Participants reported traumatic events that had occurred from two months prior to their participation to more than 25 years post-trauma. This presented a broad range of time periods and of emotional proximity to the events. There was no evidence for a linear relationship, either positive or negative, between PTG and time since the trauma. However, in post hoc analyses, wherein the broader periods of time since the trauma were condensed, a significant interaction between time since the trauma and depression, anxiety and stress was observed. The evidence suggested that PTG developed and declined over time, but with the moderating effect of feelings of depression, anxiety and stress. Here the possibility of a curvilinear pattern of association between PTG and time since trauma became apparent. The perception of PTG after trauma appeared to reach a peak at two to five years post-trauma, and then declined as time passed. This curvilinear pattern of interaction between PTG and time since the trauma, moderated by depression, anxiety and stress, is similar to the curvilinear relationship between PTG and distress over time as found in the study by Lechner et al. (2006). This non-linear association fits with the changing quality of cognitive processing that is believed to take place over time within the model of PTG (Calhoun & Tedeschi, 2006). Future research should explore this relationship using statistical methodologies that are robust to the assumption of linearity.

The interaction of the development of PTG over time as moderated by the negative emotions of depression, anxiety and stress also highlighted the often paradoxical nature of PTG. Even though immersed in feelings of depression, and reporting moderate levels of anxiety and stress, participants were able to recognise and perceive growth as a result of a specific trauma – this is a salient characteristic of growth post-trauma. As argued by Tedeschi and Calhoun (2004), PTG does not negate nor counteract the effects of psychological distress. Posttraumatic growth develops in the context of significant psychological distress, and has been shown to coexist with distress in the aftermath of trauma (Tedeschi & Calhoun, 2004). In this sample, the co-occurrence of emotional distress, as represented by depression, anxiety and stress with growth, was realised. The moderate levels of depression, anxiety and stress expressed by volunteers in the sample may have facilitated awareness of, or greater engagement with, the psychological impact and emotions of stressful experiences. These adjustment processes are highly pertinent to posttraumatic growth. Also, Tedeschi and Calhoun (2004) have suggested that "some degree of psychological upset or distress is necessary not only to set the process of growth in motion, but also some enduring upset may accompany the enhancement and maintenance of posttraumatic growth" (p.13).

The feelings of depression, anxiety and stress reported by individuals cannot be linked to the traumatic event, and may be more representative of a current state of distress, as participants were asked about their feelings in the past week. However, in the context of this study, it is also possible that individuals were immersed in reminders of the event that they reported in the first phase of the questionnaire. From the limited data available, it is not possible to determine if these feelings were artefacts of the trauma or the result of other life stressors or crises. The depression, anxiety and stress may well reflect underlying mental health issues, be the outcome of additional or multiple traumatic events, or be the consequences of the highly

stressful context of urban life in South Africa. Therefore, it remained unclear whether the depression, anxiety and stress reported by individuals could be linked to their experience of the traumatic event, or whether these were the result of other factors.

Central to the perception of growth is the individual's rebuilding of their worldview - a process of adaptation and revision of fundamental beliefs toward the development of a new meaning and value system that has incorporated the traumatic experience. Individuals experiencing the distress and uncertainty of stress, anxiety and depression may be more open to finding meaning, to questioning their belief system, than those individuals who are not experiencing distress. The moderate level may also be significant. Those individuals who are suffering high levels of depression, anxiety and stress may have been overwhelmed by the negative emotional states, thus impairing their ability to perceive PTG. Those who experienced low levels of negative affect may not have been prompted to search for growth and meaning. It was evident that even those individuals who experienced high levels of stress, depression and anxiety, were still able to perceive PTG. Again, individuals have consistently reported both posttraumatic growth and psychological distress in the aftermath of trauma. Several authors have suggested that over time, individuals move from comprehending the impact of the trauma (meaning as comprehensibility) to finding significance in the traumatic event and its impact (meaning as significance) (Janoff-Bulman, 2006). This may explain individuals' ability to perceive growth, even after several years have passed and even though immersed in current feelings of depression, anxiety and stress. Finding significance in the traumatic event may have enabled participants to accommodate the cognitive and emotional impact of the trauma and perceive growth. This rationale is, however, hampered by the limited information provided by participants and the lack of pre-existing data regarding the individual's psychological well-being. As in other studies, the results have suggested that the

relationship between PTG and emotional distress or other indicators of psychological well-being is difficult to clarify and subject to the possible influence of other variables (Park & Helgeson, 2006).

The data further hinted at the possibility of a differential pattern of growth that could be plotted for each type of traumatic event and each factor of PTG. The impact of the type of traumatic event and of time since the event on the perception of PTG requires more detailed consideration, especially with regard to the temporal course of PTG and the impact of time since the event on the perception of PTG. Inconsistent results regarding the associations between PTG and time since event, and PTG and type of event have been found in the studies across the board. A pattern of interaction may exist between both factors and PTG. Additionally, an assessment of the individual's current state of psychological functioning may be necessary to fully understand their perception of growth. This specific pattern of growth was revealed for individuals exposed to crime across the factors of PTG and as moderated by time since the trauma, and feelings of depression, anxiety and stress. Timing of assessment is thus a critical factor and should be taken into account, in addition to the individual's current feelings and emotional status. The results of this study have indicated that time since the traumatic event is predictive of posttraumatic growth. A specific trajectory of PTG, for different event types and domains of growth, may also develop over time. Further examination of the stability of patterns of PTG over time is needed, as well as the exploration of the temporal course of PTG, particularly when comparing data within varying time frames.

The impact of the type of traumatic event and of time since the event on the perception of PTG requires more detailed consideration, especially with regard to the temporal course of PTG and the impact of time since the event on the perception of PTG. Inconsistent results

regarding the associations between PTG and time since event, and PTG and type of event have been found in the studies across the board. A pattern of interaction may exist between both factors and PTG. Additionally, an assessment of the individual's current state of psychological functioning may be necessary to fully understand their perception of growth.

5.1.6 The Domains of Growth

PTG is comprised of a cluster of benefits post-trauma, the domains of growth that are represented by five factors (Tedeschi & Calhoun, 2004). Variability within post-trauma growth responses emerged from the examination of these five factors. Post-hoc analyses suggested different growth trajectories across PTG factors and event types, as moderated by depression, anxiety and stress. This was most clearly plotted for the group who had experienced perpetrated crime. However, an interesting pattern of relationships emerged for the factors of PTG and other study variables. Individuals who reported high levels of subjective distress after the trauma as well as depression and anxiety, reported higher scores for three PTG factors, specifically Relating to others, New possibilities, and Appreciation of life. The factor Personal strength was positively related to the impact of the event, and Spiritual change was positively associated with depression and anxiety.

Different subjective experiences of trauma appear to lead to different expressions of PTG, evident from the patterns of correlations between the variables and the five factors of the growth process. Posttraumatic growth as a concept encompasses a wide range of positive psychological responses in the wake of trauma, and these can cluster to form specific patterns of reactions. Individuals' responses may be influenced by numerous other factors, such as the type of trauma and time since that event occurred. The individuals' personality traits and coping resources were not assessed in this sample, but cannot be disregarded in the process of

PTG. The composite character of PTG is the bedrock of the multidimensional nature of PTG as a psychological construct. It is perhaps also the multidimensional nature of PTG that has generated the mixed and inconclusive evidence from differing samples and studies. Within this study alone, a picture has emerged of PTG as a response to trauma that can include numerous pathways to growth and positive change in the aftermath of trauma. Survivors of different types of trauma do endorse growth, and these changes are can be grouped into similar responses, or domains of growth. As a result, growth post-trauma reflects a multifaceted pattern of responses that may be totally distinct from one individual to another, yet accumulate to represent the same degree of growth. It could be that these clusters of self-reported change may be the result of distinct psychological and cognitive processes (Janoff-Bulman, 2004). The common element is the individuals' perception of a change in their functioning, a transformation that can be attributed to their experience of trauma. Despite the results obtained from the analyses, there was no firm evidence to indicate whether PTG reported by participants was real or illusory in nature.

This study has generated a wealth of information about a South African sample faced with a variety of traumas over a varying time period. It has presented detailed evidence for the varying patterns of responses and reactions that comprise posttraumatic growth. It was established that the type of event and time since the event are unique predictors of PTG. Posttraumatic growth has many features; it cannot easily be reduced to a single score that has the same meaning for each individual. Rather, it is a complex, subjective perception of growth on a personal and psychological level that may or may not be translated into physical action. The type of event may influence the pattern of growth for the individual, and over time, the expression and magnitude of growth may vary. Moreover, cognitive and emotional engagement with the type of event, and openness to emotional distress may enhance the

perception of PTG. While the influence of context is difficult to quantify, it is assumed, based on the model, that contextual factors have influenced the expression of PTG in this sample. Despite moderate levels of current depression, anxiety and stress and regardless of the length of time since the traumatic event had occurred, the South African sample reported posttraumatic growth as a positive outcome of their traumatic event. This was true across all event types, although the type of trauma may have influenced the perception of PTG to a degree. In a country like South Africa, dealing with the realities of the high incidence of violence, crime, AIDS and poverty, it may be that the positive face of posttraumatic growth will enable individuals to transform the pain and distress of trauma into personal growth.

6. Conclusion

"….the data do seem to suggest that that the presence of PTG is an indication that persons who experience it are living life in ways that, at least from their point of view, are fuller, richer, and perhaps more meaningful."

(Tedeschi & Calhoun, 2006, p.7.)

6.1 LIMITATIONS OF THE STUDY

The results of this study need to be placed in the context of the limitations and certain ethical considerations that have influenced the research.

6.1.1 The Sample

The study made use of a self-selected convenience sample drawn from local South African communities. This may have introduced bias in terms of the type of participants who are willing to offer their time and personal information in order to complete the questionnaires for no personal gain. It may also have drawn those individuals who have been more active and aware of their quest for meaning, as it was clear that the nature of the survey was about trauma and coping. As the majority of respondents had access to email and the Internet in order to complete the survey, the sample may have approximated a group of middle class, educated urban dwellers. Also, the nature of the questionnaires required a certain level of proficiency in reading and writing and a familiarity with the written English word that may have precluded less educated people from participating. A positive feature of the self-selected sample was that participants were able to choose to participate and give information regarding

the subjective and traumatic nature of their experience in the comfort of their own space and at their own pace.

The study was reliant on retrospective self-reports of perceptions of growth from individuals, and may be subject to recall distortions and social desirability bias. There were no data available to assess the pre-existing personality attributes and coping skills of each participant. This is an inherent limitation for the majority of PTG studies as traumatic events typically are unexpected and occur without warning. Further, participants' retrospectively rated their emotional distress and personal growth after the event and this may have been influenced by their current feelings of distress, depression, anxiety and stress.

The validity of PTG is repeatedly questioned and only seldom confirmed. Reports of PTG may represent overt changes in psychological functioning and behaviour, or cognitive distortions that have the adaptive function of buffering the emotional distress associated with trauma, or both (Westphal & Bonnano. 2007; Park et al, 1996). There was no corroborating evidence from significant others to endorse the participants' reports of growth. Within this study, PTG was accepted as a largely subjective perception of positive psychological change. Growth may have had emotional, cognitive, social and behavioural manifestations. The fact is that participants reported their perceptions of growth, whether real or not. These subjective perceptions of how the trauma had altered or enhanced their attitudes and cognitions were of paramount importance, and reports of PTG were accepted as valid for the participants.

Due to the sampling method, the sample may not have been representative of all communities in South Africa, given the broad range of cultural and socioeconomic contexts that exist within this country. It is possible that the sample was homogenous with regard to race and

may have consisted largely of white, middle class, English-speaking women, given that requests for volunteers were distributed through the email address lists of English-speaking woman, homes in a middle class suburb and two private schools. However, this is an assumption as respondents were not asked to provide any information regarding race or socio-economic status. South Africa is diverse in terms of cultural and ethnic groupings – as such, the results may not be replicable across all population groups. Furthermore, the role of culture and religion was not examined in this sample. The possible impact of diverse cultural backgrounds in South Africa, and of religion as an important factor in growth post-trauma, may have been over-looked. For example, one respondent, a woman of 71 years whose husband died of cancer in 2007, stated on her questionnaire: "Being Born Again and just loving the Lord so much and serving Him, I could pull through everything with Him. Hallelujah!" In addition, the temporal course of the growth process and the determinants of PTG may vary in other samples and cultural groups. Despite the limitations of the sample, this examination of PTG in the South African context has yielded significant results and may have implications for clinical practice with trauma survivors as well as for future research on the temporal course of recovery and growth in the wake of trauma. A further limiting factor was the cross-sectional design of study that limited the ability to infer causality in the interaction of variables.

6.1.2 Issues of Trauma

For the focus on posttraumatic growth, the study sought participants who had experienced a wide range of traumatic events. The search for volunteers was not targeted through a specific institution such as an emergency room, support network or health provider. Rather, the study channelled requests for volunteers through community structures. Participants reported a range of traumatic events, and also a range of time frames since their experience of the

trauma. In turn, these traumas differed in terms of severity and of consequences, and no two traumatic experiences could be fully equated. Traumatic events may encompass multiple stressors that have a different impact at different times. Developing the broad categories of events may also have forfeited subtle variations in experiences of individuals who provided information. For example, the crime sub-group included women who were sexually assaulted as well as participants who were forcibly tied up and beaten, their lives repeatedly threatened while they robbed in their own home, and other individuals who were hijacked in their drive-way. In the accident sub-group, one male volunteer was hit head on by car whilst out running, and barely survived. He spent several weeks in a coma, and lost two of his running partners. A practicing family doctor at the time, he is no longer able to work due to the severity of his head injury. His experience is compounded by his loss of earnings and vocation, by his extensive head injuries that still affect him and by his bitterness that the perpetrator was not suitably punished. However, this was necessary in order to examine whether the type of the traumatic event played an important role in the perception of PTG. It also yielded an interesting pattern of responses, given the high number of responses from victims of perpetrated crime (48.9% of the sample).

It was accepted that there was a significant degree of variability in terms of the traumatic experiences and the individual's coping and recovery in the aftermath of trauma. Again, this compounds the subjective and personal nature of the trauma victim's experience. As in the Tedeschi and Calhoun model of PTG, a complex interplay of personality attributes, coping skills, and social and cultural factors are assumed to play a role in the process of growth after trauma. The questionnaires, however, only assess a specific area of information, that of self-perceived PTG. The study may have overlooked a range of emotions and consequences experienced by the survivors of the traumatic event.

As noted, communities in South African are faced with multiple stressors on several levels. It is possible that many individuals' are suffering from high levels of stress and anxiety in South Africa (Schlebusch, 2004). Many individuals may have been affected by crime, chronic illness or the consequences of motor accidents, but may also be suffering from depression, anxiety and stress due to pre-existing psychological conditions. Participants may have experienced multiple traumas through the course of their lives, and may no longer be able to perceive benefits from their experience due to desensitisation and trauma overload. Ongoing stress and anxiety may also have eroded their ability to appraise the situation positively and undermined their personal strength. Exposure to several different types of trauma at different times may have had an impact on their current perceptions of PTG. The varying time frames was both a strength, as it showed how PTG has developed over time, and a weakness as it may have diluted the relationships between PTG and variables of interest.

6.1.3 Issues of Measurement

While the response to the survey and questionnaire was greater than anticipated, the study was hampered by small sub-group sizes, especially with regard to the types of trauma reported. Larger sample sizes would have provided greater power to detect differences. This may have affected the results achieved. Several limitations of the PTGI as a measure of growth have been raised. As the questions are all positively worded, and the scale does not assess the negative changes that participants may have experienced. The specific wording of questions may have created a response bias that prompted participants to respond positively (Park & Lechner, 2006). Validated on a college student population, the PTGI may fail to assess dimensions of growth that are specific to other populations (Park & Lechner, 2006). Moreover the scale limits individuals' responses to the domains of interest, and may fail to capture perceived growth in others areas of their lives, that are not included in the inventory.

Evidence for whether individuals experience PTG in the domains is not conclusive and the 'shifting factor structure' of the PTGI is believed to be the result of more than the influence of the stressor itself (Park & Lechner, 2006).

As a retrospective measure of perceived change, there was no validation of reported growth with actual change that occurred, or comparison with the individuals' pre-trauma self. Questionnaires that require recall of the pre-trauma self pose a serious threat to validity as participants tend to derogate their past selves in relation to their current state of being (Stanton et al., 2006) and in this way, are able to perceive growth. Despite these limitations, the PTGI has been accepted as a sound instrument for assessing positive reports of change after traumatic life events (Smith & Cook, 2004) and has been used successfully as an online survey.

6.2 ETHICAL CONSIDERATIONS

6.2.1 Characteristics of the Sample

The sample was identified as a vulnerable population, as participants had been exposed to a traumatic event in their personal life. It was acknowledged that the completion of the self-report questionnaires and thoughts about their experience of the traumatic event may have triggered unresolved feelings and reminders about the trauma. For this reason a resource sheet was included with the questionnaire packs and online survey that provided a list of local, easily accessible resources for additional psychological and emotional help. Participants were also able to withdraw from the study at any point in the process.

6.2.2 Characteristics of the Survey

Volunteers were informed that the study was a survey of the traumatic experiences of South Africans. The real purpose of the study, as an examination of perceptions of PTG, was not overtly stated in the study literature as this may have influenced the responses of participants on the questionnaires. The majority of participants submitted their information via the trauma survey posted online (n = 96). There was thus no control over who accessed the site or completed the questionnaires. As the request for volunteers was targeted by means of flyers and email links, this provided some measure of containment. The use of the online survey and the lack of identifying details from participants also prevented any follow up or feedback to individuals.

6.3 FUTURE DIRECTIONS

Further examination of the influence of the type of event on the perception of growth is required to fully understand the process of PTG. The timing of the assessment of PTG is also a crucial variable that requires further investigation, and as is often noted in the literature, detailed investigation of PTG in a longitudinal study design is required. While longitudinal studies are needed, the value of cross sectional methods to examine PTG has been noted (Calhoun & Tedeschi, 2006). A sample of participants post-trauma at different time periods, compared to another sample that have faced a different type of event, may shed some more light on the moderating effects of variables of time and type of event, although the practical and ethical considerations of this type of investigation are substantial. Future research may also benefit from detailed examination of the factors of PTG, to give a fuller picture of the variability in the perceptions of growth.

This study has examined the type of event and its predictive value for PTG, in a sample of South African origin. Significant differences in PTG as a function of the type of event where revealed. Furthermore, time since the traumatic event emerged as a critical variable in the understanding the course of PTG. Time since trauma has provided valuable insight into the levels of PTG in conjunction with an examination of individual's current indicators of well-being. Further research on the variables of type of event and time since event is required to replicate these results and understand the nature of the impact of these variables.

The focus of this study was posttraumatic growth in a sample of South African individuals who had experienced different types of traumatic events – with particular reference to the type of traumatic event and time since the traumatic event, and the patterns of perceived growth. Age and gender, perceptions of social support and feelings of depression, anxiety and stress, were also analysed as covariates. What has emerged is a portrait of PTG as a multidimensional perception of change in the aftermath of trauma. Within the subjective experience of growth there were significant commonalities in the perception of PTG. The type of event appeared to account for variance in the perception of posttraumatic growth, and time since the event was also predictive of PTG. Moreover, the perception of growth appeared to co-exist with significant feelings of depression, anxiety and stress, preceded by a significant impact of the emotional nature of the event. It also revealed that interpersonal relationships and social support were important factors in the process of PTG, although no causality could be established.

There is a lack of consensus in defining the processes associated with PTG, and a wealth of evidence, some contradictory, for the key factors affecting PTG. In this sample, the analyses of the data indicated a multifaceted pattern of relationships between PTG and the variables of

interest. There were several domains in which growth occurred, and these patterns varied according to the traumatic event and time since the event. In this sample, growth emerged as a subjective experience of psychological change, associated with significant emotional distress and negative emotional states. Above all, individuals reported the ability to find meaning and perceive benefit out of their experience of a traumatic event. The evidence showed the differences in perceptions of growth across the sample. As Calhoun and Tedeschi (2006) have noted: "Different persons report different degrees of (including the absence of) growth and different kinds of growth and ascribe widely differing significance to the positive changes they have experienced" (p.15). The complexity of posttraumatic growth may be a manifestation of the deeper issue: is PTG real or illusory? This is the fundamental question.

Posttraumatic growth is a complex perception of change. It is multidimensional and encompasses the human elements of growth through adversity. Despite a range of events, the majority of the sample perceived a moderate or greater than moderate degree of PTG. This is heartening. More than ten years post-democracy, South Africa is a country facing high levels of crime and violence within communities, and rising incidences of lifestyle diseases, cancer and stress. Within this unique context, individuals who have experienced the pain and distress of a life-altering traumatic event have provided detailed perceptions of PTG. These perceptions of personal growth and change as a result of the trauma may have profound implications for the individual, and via a ripple effect, for their families and communities as well. For South Africans, this may be the road to healing, the recognition of personal strength and transformation in the midst of pain and emotional suffering. The ultimate paradox of the concept of posttraumatic growth is that out of the emotional morass of pain and distress, a new perception of the self, improved relationships, and greater appreciation for life can be forged. This is the complexity of growth post-trauma

7. References

"It is through this process of struggling with adversity that changes may arise that propel the individual to a higher level of functioning than that which existed prior to the event."

(Linley & Joseph, 2004, p.11)

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8. Appendices

"Psychologically, PTG can be regarded as a stable state of mind, transforming disturbing past events into a milder light of hope."

(Znoj, 2006, p.184)

8.1 STATISTICS OF CRIME AND VIOLENCE IN SA

TABLE 12

Main Causes of Non-Natural Deaths in South Africa, 2000-2004

YEAR	***2000***	***2001***	***2002***	***2003***	***2004***	***TOTAL***	***%***
No. of Mortuaries	15	32	34	36	35		
Violence	8 341	11 163	11 587	10 385	8 575	50 051	43%
Transport accidents	4 982	6 796	6 850	6 616	6 106	31 350	27%
Other accidents	1 467	2 468	2 524	2 748	2 380	11 587	10%
Suicide	1 772	2 482	2 471	2 529	2 462	11 716	10%
Unspecified	2 082	2 139	2 062	2 352	1 838	10 473	9%
TOTAL	**18 644**	**25 048**	**25 494**	**24 630**	**21 361**	**115 177**	**100%**

Source: *National Injury Mortality Surveillance System, 2000 – 2005 (CSVR, 2007, p.35)*

TABLE 13

SA Police Statistics of Violent Crimes, 2004 - 2006

Year	***2004***	***2005***	***2006***	***Up/down***	***Per 100 000***
Murder	19 824	18 793	18 528	↓ 1.4	39.5
Rape	52 733	55 114	54 926	↓ 0.3	117.1
Attempted murder	30 076	24 516	20 571	↓ 16.1	43.9
Common Robbery	95 551	90 825	74 723	↓ 17.7	159.4
Kidnapping	3 004	2 618	2 320	↓ 11.4	4.9
Carjacking	13 793	12 434	12 825	↑ 3.1	27.4
Bank/Cash-in-Transit Robbery	246	278	442	↑ 74.2	2.5
Residential Burglary	299 290	276 164	262 535	↓ 13.3	559.9
Vehicle/Motorbike Theft	88 144	83 857	85 964	↑ 2.5	183.3
Aggravated Robbery	133 658	126 789	119 726	↓ 5.6	255.3

Source: *Crime Information Analysis Centre – South African Police Service (Business against Crime, 2007*)

TABLE 14

Contact Crimes committed in South Africa, 2007

– Raw figures for the Period 01 April to 30 September 2007

Crime	***2007***
Murder	8 925
Rape	22 887
Attempted Murder	9 269
Assault (with intent /GBH)	96 499
Common assault	91 577
Indecent assault	4 249
Aggravated Robbery	59 998
Common robbery	32 329
Carjacking	7 214

Source*: Crime Statistics 2007 (South African Police Services, 2007)*

8.2 REQUESTS FOR VOLUNTEERS

8.2.1 Flyer for Trauma Survey

This flyer, printed in A5 format, was posted in letter boxes and on car windscreens, and placed in pharmacy medicine packages.

Please fill in my…

Trauma Survey!

I am doing a Masters in Research Psychology @ Wits, and I am looking for South African adults to be a part of my survey about their experiences of difficult life events - how they feel and what they have experienced.

If you have had a traumatic life event -
Be it a serious car accident, a severe illness, a victim of crime or violence, I would like to ask you to participate in my study.

All information is confidential and it's quick…
Just click onto **www.traumasurvey.co.za**, fill in your responses and it's done!

Or else pass this onto someone you know who has faced difficulties and may want to share their experiences with me.

Many thanks,
Shelley Roe-Berning
082 564 7077

8.2.2. Flyer attached to Questionnaires

This flyer, printed in A5 format, was attached to the hard copy questionnaire packs that were distributed to potential volunteers.

Please fill in my…

Trauma Survey!

I am doing a Masters in Research Psychology @ Wits, and I am looking for South African adults to be a part of my survey about their experiences of difficult life events – how they feel and what they have experienced.

If you have had a traumatic life event –
a serious car accident, a severe illness, as a victim of crime or violence or other, I would like to ask you to participate in my study.

All information is confidential and it's quick… Just fill in your responses on the questionnaire, pop it into the envelope and post!

Or else pass this onto someone you know who has faced difficulties and may want to share their experiences with me.

Many thanks,
Shelley Roe-Berning
082 564 7077

8.2.3 Emailed Request

My name is Shelley and I am doing my Masters in Research Psychology at Wits… For my research project, I am looking for 150 South African adults to be a part of my survey on traumatic events – how they have coped with the experience, what happened, how they feel about it.

If you have experienced a traumatic event - a serious car accident, the death of someone close, abuse at the hands of another, survived cancer or another severe illness or been the victim of crime or violence (or other) – I would like to ask you to consider completing my survey.

It's quick, it's confidential. Just click on this link below, follow the steps and complete it online:

http://www.traumasurvey.co.za/

If this does not apply to you, maybe you know someone who would be willing to share their experiences and complete the survey. Please forward it to anybody who may be able to participate.

I appreciate and value your help…. With this information, I will be able to complete my dissertation and hopefully create greater understanding about the way we as South Africans are faced with trauma on a daily basis.

Regards,

Shelley Roe-Berning
082 564 7077

8.2.4 Newsletter Request

SURVEY

One of our parents is doing her Masters in Research Psychology at Wits and needs 150 adults to be part of her survey on Traumatic Events. If you are able to assist in this quick and confidential survey, please click on the link below:

www.traumasurvey.co.za

Thank you.

8.3 QUESTIONNAIRES

8.3.1 Study Information Sheet

My name is Shelley Roe-Berning, and I am studying for a Masters degree in Research Psychology at the University of the Witwatersrand. For this degree I am required to complete a research project, and this is why I am asking for your help…

I am conducting research on the experiences of South Africans who have been exposed to difficult life events. Everyday we hear more stories about people who have had very stressful and traumatic experiences. These can be hijackings, severe illnesses like cancer, renal failure and heart attacks, car accidents, muggings, assault, armed robbery and so on. In addition to this, we are looking at the ways people cope with their difficult life experiences.

If you have had an experience of trauma or difficult life events, we would like to invite you to participate in this study. Participation in this research will entail completing the attached questionnaires. This will take approximately 25 minutes to complete. Participation is entirely voluntary, and you will not be advantaged or disadvantaged in any way for choosing to complete or not to complete these questionnaires. You can choose to withdraw at any time.

While some of the questions ask for personal information, no identifying information is needed and you will remain anonymous. All the information collected is completely confidential. Your completed questionnaires will only be seen by me and my supervisor. This also means that I will not be able to give you any individual feedback.

If you feel that you would like to participate in this study, please fill in the attached questionnaires as carefully and honestly as you can. Once you have answered the questions, place the questionnaires in the envelope provided and post it. If you do return your questionnaires, this will be considered as consent to participate in the study.

Your participation in this study would be greatly appreciated. This research will contribute to the understanding of how South African individuals deal with difficult life events. Your contribution will be invaluable. If you have any queries, please contact me.

Kind regards,

Shelley Roe-Berning

082 564 7077

My Supervisor is Ms Esther Price, Wits University, 011 717 5917

8.3.2 Demographic Information Sheet

INFORMATION SHEET

Before you proceed, please indicate that you are willing to provide this information voluntarily and that you understand that all information is strictly confidential.

Yes ❍ No ❍

Please provide some biographical information about yourself and the difficult life experience that you have faced:

Age _____

Gender Male ❍ Female ❍

Your Stressful Life Event:

Please describe the type of difficult event that you have experienced:

_____

_____

_____

_____

_____

_____

When did it happen to you?

_____

_____

_____

_____

Do you have a specific date? _____

Please indicate by means of a cross, how you felt about this event with regard to the threat to yourself and/or your health:

1	**2**	**3**
Mild threat to life and / or health	Moderate threat to life and / or health	Severe threat to life and / or health

Anything else you would like to add?

_____

_____

_____

_____

We all have a story to tell, all have had our share of difficulties and heartaches… Thank you for sharing your information. All details and responses are strictly confidential and will be used for research purposes only.

Please turn the page ☞

8.3.3 Posttraumatic Growth Inventory (PTGI)

Before answering the following questions, please focus on the traumatic or life altering event that has occurred in your life (referred to above).

Please indicate the type of experience you are thinking of:

_____ Loss of a loved one
_____ Chronic or acute illness
_____ Violent or abusive crime
_____ Accident or injury
_____ Disaster
_____ Job loss
_____ Financial hardship
_____ Career or location change/move
_____ Change in family responsibility
_____ Divorce
_____ Retirement
_____ Combat
_____ Other

Time lapsed since event occurred

____ 6 months - 1 year
____ 1 - 2 years
____ 2 - 5 years
____ More than 5 years

Please turn the page ☞

Indicate for the statements below the degree to which the change reflected in the question is true in your life as a result of your crisis, using the following scale:

---

0 = I did not experience this change as a result of my crisis.
1 = I experienced this change to a very small degree as a result of my crisis.
2 = I experienced this change to a small degree as a result of my crisis.
3 = I experienced this change to a moderate degree as a result of my crisis.
4 = I experienced this change to a great degree as a result of my crisis.
5 = I experienced this change to a very great degree as a result of my crisis.

1. I changed my priorities about what is important in life.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

2. I have a greater appreciation for the value of my own life.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

3. I developed new interests.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

4. I have a greater feeling of self-reliance.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

5. I have a better understanding of spiritual matters.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

6. I more clearly see that I can count on people in times of trouble.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

7. I established a new path for my life.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

8. I have a greater sense of closeness with others.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

9. I am more willing to express my emotions.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

10. I know better that I can handle difficulties.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

11. I am able to do better things with my life.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

12. I am better able to accept the way things work out.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

13. I can better appreciate each day.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

14. New opportunities are available which wouldn't have been otherwise.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

15. I have more compassion for others.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

16. I put more effort into my relationships.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

17. I am more likely to try to change things which need changing.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

18. I have a stronger religious faith.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

19. I discovered that I'm stronger than I thought I was.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

20. I learned a great deal about how wonderful people are.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

21. I better accept needing others.

0 ❍ 1 ❍ 2 ❍ 3 ❍ 4 ❍ 5❍

Please turn the page ☞

FACTOR 1 – Q 6, 8, 9, 15, 16, 20, 21

FACTOR 2 – Q 3, 7, 11, 14, 17

FACTOR 3 – Q 4, 10, 12, 19

FACTOR 4 – Q 5, 8

FACTOR 5 – Q 1, 2, 13

8.3.4 Impact of Events Scale – Revised (IES-R)

Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty was for you DURING THE SEVEN DAYS after your STRESSFUL LIFE EVENT. With respect to your experience, how much were you distressed or bothered by these difficulties?

	Not at all	**A little bit**	**Moderately**	**Quite a bit**	**Extremely**
Any reminder brought back feelings about it	0	1	2	3	4
I had trouble staying asleep	0	1	2	3	4
Other things kept making me think about it	0	1	2	3	4
I felt irritable and angry	0	1	2	3	4
I avoided letting myself get upset when I thought about it or was reminded of it	0	1	2	3	4
I thought about it when I didn't mean to	0	1	2	3	4
I felt as if it hadn't happened or wasn't real	0	1	2	3	4
I stayed away from reminders about it	0	1	2	3	4
Pictures about it popped into my mind	0	1	2	3	4
I was jumpy and easily startled	0	1	2	3	4
I tried not to think about it	0	1	2	3	4
I was aware that I had a lot of feelings about it, but I didn't deal with them	0	1	2	3	4
My feelings about it were kind of numb	0	1	2	3	4
I found myself acting or feeling as those I was back at that time	0	1	2	3	4
I had trouble falling asleep	0	1	2	3	4
I had waves of strong feelings about it	0	1	2	3	4
I tried to remove it from my memory	0	1	2	3	4
I had trouble concentrating	0	1	2	3	4
Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart	0	1	2	3	4
I had dreams about it	0	1	2	3	4
I felt watchful or on-guard	0	1	2	3	4
I tried not to talk about it	0	1	2	3	4

8.3.5 Depression Anxiety Stress Scale (DASS)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found myself getting upset by quite trivial things	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I just couldn't seem to get going	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I had a feeling of shakiness (eg, legs going to give way)	0	1	2	3
8	I found it difficult to relax	0	1	2	3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting upset rather easily	0	1	2	3
12	I felt that I was using a lot of nervous energy	0	1	2	3
13	I felt sad and depressed	0	1	2	3
14	I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	0	1	2	3
15	I had a feeling of faintness	0	1	2	3
16	I felt that I had lost interest in just about everything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life wasn't worthwhile	0	1	2	3

Reminder of rating scale:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

22	I found it hard to wind down	0	1	2	3
23	I had difficulty in swallowing	0	1	2	3
24	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3
25	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
26	I felt down-hearted and blue	0	1	2	3
27	I found that I was very irritable	0	1	2	3
28	I felt I was close to panic	0	1	2	3
29	I found it hard to calm down after something upset me	0	1	2	3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3
31	I was unable to become enthusiastic about anything	0	1	2	3
32	I found it difficult to tolerate interruptions to what I was doing	0	1	2	3
33	I was in a state of nervous tension	0	1	2	3
34	I felt I was pretty worthless	0	1	2	3
35	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
36	I felt terrified	0	1	2	3
37	I could see nothing in the future to be hopeful about	0	1	2	3
38	I felt that life was meaningless	0	1	2	3
39	I found myself getting agitated	0	1	2	3
40	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
41	I experienced trembling (eg, in the hands)	0	1	2	3
42	I found it difficult to work up the initiative to do things	0	1	2	3

Please turn the page ☞

8.3.6 Multidimensional Scale of Perceived Social Support (MSPSS)

We are interested in how you feel about the following statements. Read each statement and indicate how you feel about that statement as follows…

Choose the 1 if you **Very Strongly Disagree**
Choose the 2 if you **Strongly Disagree**
Choose the 3 if you **Mildly Disagree**
Choose the 4 if you are **Neutral**
Choose the 5 if you **Mildly Agree**
Choose the 6 if you **Strongly Agree**
Choose the 7 if you **Very Strongly Agree**

1. There is a special person who is around when I am in need.

   1 2 3 4 5 6 7

2. There is a special person with whom I can share my joys and sorrows.

   1 2 3 4 5 6 7

3. My family really tries to help me.

   1 2 3 4 5 6 7

4. I get the emotional help and support I need from my family.

   1 2 3 4 5 6 7

5. I have a special person who is a real source of comfort to me.

   1 2 3 4 5 6 7

6. My friends really try to help me.

   1 2 3 4 5 6 7

7. I can count on my friends when things go wrong.

   1 2 3 4 5 6 7

8. I can talk about my problems with my family.

   1 2 3 4 5 6 7

9. I have friends with whom I can share my joys and sorrows.

1 2 3 4 5 6 7

10. There is a special person in my life who cares about my feelings.

1 2 3 4 5 6 7

11. My family is willing to help me make decisions.

1 2 3 4 5 6 7

12. I can talk about my problems with my friends.

1 2 3 4 5 6 7

8.3.7 Resource Sheet

Thank you for taking the time to fill out these questionnaires. You have participated in a study of how you have experienced a difficult life event. Thinking about your experience may have evoked certain feelings and images related to that traumatic event. If you are feeling uncomfortable or distressed, and would like to talk to someone about it, I have listed some contact details of counselling services available in Johannesburg.

If you feel you need to speak to someone right away, please contact me, or else speak to my supervisor, Ms Esther Price at Wits University.

Here is a list of counselling services that you can contact for assistance:

- Emnthonjeni Centre, @ Wits University
  011 717 4513 - Counselling at this service is pre-arranged and free of charge. Please speak to the Receptionist regarding your appointment.

- Wits Trauma Centre
  011 403 5102

- Lifeline 24-hour toll-free counselling line
  0861 322 322 www.lifeline.org.za

- Life Line East Rand Centre, Benoni
  011 421 0384

- Family Life Centre, Parkwood
  011 788 4784/5

- FAMSA East Rand
  011 892 4272/3/6

If you do not wish to speak to these counsellors, you can also contact your family doctor for a referral to a clinical psychologist.

Once again, thank you for taking the time to fill out these surveys!

Many thanks,

Shelley Roe-Berning
May 2008

Author's Note

On the 11th October 1992, on a beautiful spring day, I experienced the life-altering impact of a traumatic event. Both my parents were killed in a light aircraft accident in Hoedspruit, along with a close family friend. Another friend survived, but with multiple injuries. That morning, the sun had risen, the day was beautiful and I had woken up with my life stretched out before me. I was about to get married, and had been accepted into the Honours course in Applied Psychology at Wits the following year. By midday my life as I knew it had been shattered…. I lost both my parents, my entire family. By the time that nightfall arrived, the landscape of my life had changed forever. The trauma became a clear dividing line that separated my carefree youth from the responsibility, pain and depth of pure emotion that marked the period of grieving. I was devastated by their death and the accumulated toll of their loss. As an only child, I shouldered the burden of wrapping up their business and estates, completing their half-built home and caring for a dependant grandparent. Through all of this, I have changed and grown… in some ways I am more uncompromising and complex, and in others, I have learnt to experience pure joy in the moment.

My parents' death was not the only trauma I have experienced, but this defining moment has shaped my life in ways seen and unseen, and is the reason I strive to understand human emotion and experience. And so, I dedicate this whole project to my mom and dad, Doug and Coral Roe, who I hope would be proud of me! I also give heartfelt thanks to my husband and children, for their love and understanding in my journey, and to my friends for their support with my process of becoming human.

Postscript:

After this dissertation was marked, I felt compelled to add a note about how the study started out and how it ended up! This is the true process of research….

I began with a clearly identified intention to compare PTG reported by individuals who had experienced crime and violence to PTG reported by individuals who had experienced health issues, particularly cancer. An examination of an external trauma versus an internal trauma and the perception of PTG. It sounded promising… after the External Ethics committee granted clearance, it was decided that a targeted approach to finding volunteers was not consistent with the vulnerable population (i.e. survivors of cancer and crime) and also in order to protect their confidentiality. Data gathering was thus opened to the general public via direct appeals for volunteers. Volunteers reported on the events that they considered to be a trauma or traumatic for them. Interestingly, by far the majority had experienced some form of crime and/or violence. However, this completely undermined my initial rationale for the study. Faced with a mountain of data but insufficient numbers for a comparison, I focussed on the types of traumatic events as reported and the other factors that appeared to play a role in the process of PTG. And so this dissertation had life breathed into it again…. And what a growth experience it was for me!

I would like to thank all the volunteers who so kindly completed the survey and shared a part of their story and experience with me. And I would like to remember one young woman in particular, who completed the survey when in remission in 2007 but who lost her battle with cancer in August 2009.